



BANGLADESH
NATIONAL FOOD AND NUTRITION SECURITY POLICY
PLAN OF ACTION
2021-2030



Food Planning and Monitoring Unit (FPMU)

Ministry of Food
Government of the People's Republic of Bangladesh



National Food and Nutrition Security Policy

Plan of Action (2021-2030)

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Honorable Minister

Ministry of Food

Govt. of the People's Republic of Bangladesh

MESSAGE

Message on the eve of celebration of Father of the Nation Bangabandhu Sheikh Mujibur Rahman's birth centenary, and coinciding with the golden Jubilee of our country's independence, the National Food and Nutrition Security Policy (NFNSP) 2020 was unveiled by the Ministry of Food (MoFood). The Policy was approved by the Government of Bangladesh (GoB) in August 2020. This ten-year Plan of Action (PoA) of the NFNSP (2020) has been prepared based on the five core objectives of the policy, to ensure food and nutrition security for all and achieve the sustainable development goals (SDGs) by 2030.

Bangladesh has shown remarkable success in agricultural production following agricultural modernization practices contributing to improvement in the food and nutrition security (FNS) situation of its population. The advent of COVID-19 pandemic has affected all countries of the world, threatening to decelerate the progress made. The GoB has taken measures to ensure that FNS of the poor and vulnerable is assured. The population of Bangladesh is projected to reach over 186 million by 2030. Against this backdrop, the GoB is committed to achieve FNS for all, at all times, to ensure an active and healthy life. It has also pledged to the global Agenda 2030 for sustainable development that includes ending poverty (SDG-1), eradicating hunger and food insecurity, and achieving improved nutrition (SDG-2) by 2030.

Considering multi-dimensional objectives of the NFNSP, the PoA has been prepared by the Food Planning and Monitoring Unit (FPMU) of the Ministry of Food following a consultative process with thematic teams from different ministries and with technical support from the Meeting the Undernutrition Challenge (MUCH) project of the Food and Agriculture Organization of the United Nations (FAO). It provides a framework for all responsible GoB agencies and FNS stakeholders for effective implementation, coordination and monitoring of the policy. The ten-year PoA covers the Eighth and Ninth Five Year Plan periods and aligns with the GoB priority of achieving FNS-related SDGs and fulfilling relevant national and international commitments by 2030.

The PoA includes actions required in order to, ensure the availability of safe and nutritious food at an affordable price, and enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvement by implementing the priority actions. It recommends nutrition-sensitive social protection and safety nets across the lifecycle with a focus on vulnerable groups and regions, in order to ensure accessibility. Coordination, data management, capacity building, partnership, and governance for effective policy implementation are key to realising the NFNSP objectives and are an important part of the PoA.

I believe this NFNSP PoA provides a framework for strengthening nutrition-sensitive food systems and realising the commitment of the Government of the People's Republic of Bangladesh to ensure safe and nutritious food for all.

Joi Bangla, Joi Bangabandhu
May Bangladesh Live Forever.

Sadhan Chandra Majumder, MP



Secretary
Ministry of Food
Govt. of the People's Republic of Bangladesh

MESSAGE

The National Food and Nutrition Security Policy (NFNSP) was approved by the Government of Bangladesh (GoB) in August 2020 and aims to ensure that the country achieves its food and nutrition security-related Sustainable Development Goals (SDGs) and fulfils the relevant national and international commitments by 2030. For the first time the GoB has formulated an integrated food and nutrition security (FNS) policy.

This ten-year NFNSP Plan of Action (PoA) – 2021-2030, has been developed in alignment with current policies and plans of action, 8th five-year plan and perspective plan, and combines nutrition-sensitive and nutrition-specific approaches, to ensure sustainable food systems and food and nutrition security.

The Plan of Action translates the policy into a time-bound results-oriented set of priority actions that operationalize the five NFNSP's objectives. It provides a guiding framework in key aspects of implementation, coordination, and monitoring by all responsible ministries, agencies, and other stakeholders. The PoA covers the 10-year period of the Eighth Year Plan (8FYP, July 2020 – June 2025) and Ninth Five Year Plan (9FYP, July 2025 – June 2030). The formulation of the PoA was coordinated by the Food Planning and Monitoring Unit (FPMU), Ministry of Food, and technically supported by the Meeting the Undernutrition Challenge (MUCH) project of FAO, with funding from USAID and the EU.

The PoA proposes 275 short- to long-term priority actions grouped under 64 Areas of Intervention, across 17 Strategies, under the five objectives of the policy. It provides a result-oriented framework for monitoring progress and guiding effective implementation. The actions proposed cut across several ministries and requires that we work in a convergent mode. The complexity of the food system is emphasized in the PoA through its five objectives that cover the areas of availability of and access to safe and nutritious food, the consumption and utilization of healthy and diversified diets for improvement in nutrition outcomes, and nutrition-sensitive social protection and safety nets across lifecycle with a focus on vulnerable groups and regions. The last objective brings together cross-cutting themes of high relevance to food and nutrition security, namely food safety; food losses and waste; data, information and analysis for evidence-based policy making; regulatory management, climate resilience and gender, and governance, policy coherence, capacity strengthening and leadership.

I believe that timely implementation of this PoA (2021-2030) of the NFNSP 2020, with the cooperative effort of the relevant ministries and other stakeholders involved, will enable us to ensure food and nutrition security for all.

Dr. Mosammat Nazmanara Khanum



Food and Agriculture Organization
of the United Nations

Robert D. Simpson
FAO Representative in Bangladesh



MESSAGE

Bangladesh has made substantial food and nutrition security progress, as evidenced by the improvement in child nutrition outcomes and the reduced prevalence of undernourishment. Even so, challenges remain which have only been exacerbated by the COVID-19 pandemic. Concerted effort is needed to reach the national nutrition targets by 2025 and Sustainable Development Goal 2 of Zero Hunger by 2030.

The National Food and Nutrition Security Policy (NFNSP) Plan of Action for Bangladesh marks an important step to realize these targets and objectives. The Plan of Action translates the NFNSP policy into a framework for implementation, coordination, and monitoring by all responsible ministries, agencies, and other stakeholders.

Supporting the five policy objectives that encompass the key elements from 'production to plate' across the food system are 17 strategies, 64 areas of intervention, and 275 short to long-term priority actions. The Food Planning and Monitoring Unit, Ministry of Food, formulated the Plan of Action with technical support from FAO's Meeting the Undernutrition Challenge (MUCH) project which is funded by the United States Agency for International Development (USAID) and the European Union (EU) Delegation in Bangladesh.

The plan of Action results from successful multi-sector, multi-ministerial, and multi-stakeholder co-operation. The formulation process involved five thematic teams comprising of officials from the planning wings of 18 line ministries and agencies that together work to ensure food and nutrition security in Bangladesh. Extensive consultations were held with stakeholders and partners that included national and local government, academia, the private sector, non-governmental and civil society organizations, and development partners.

FAO looks forward to the implementation and monitoring of this Plan of Action to address both immediate and longer-term food and nutrition security challenges in the country.

Robert D. Simpson



Director General (Additinal Secretary)

Food Planning and Monitoring Unit (FPMU)

Ministry of Food

Govt. of the People's Republic of Bangladesh

PREFACE

The National Food and Nutrition Security Policy (NFNSP) Plan of Action (2021-2030) elaborates the actions required to realize the five objectives of the NFNSP (2020). It identifies responsible actors (government and non-government) and suggests a set of policy targets and indicators for monitoring progress. The document provides a set of guidelines regarding inter-ministerial coordination, sectoral planning, and data validation process, for effective implementation. Prepared following a multistakeholder consultative process, the Plan of Action (PoA) will serve as a guiding framework for implementation of the NFNSP.

Coordinated by the Food Planning and Monitoring Unit (FPMU), Ministry of Food, and technically assisted by the Meeting the Undernutrition Challenge (MUCH) project implemented by FAO with funding from USAID and the EU, the PoA formulation process began with a thorough review of the initiatives and strategies proposed under each of the five objectives of the NFNSP. Policy consistency has been ensured in the preparation of the PoA following an extensive review of the NFP strategic linkages with key policy and planning documents of the government. The PoA has 275 priority actions grouped under 64 Areas of Intervention across 17 strategies under the five objectives of the Policy. The main purpose of the PoA is to provide a result-oriented set of priority actions that contributes to operationalize the NFNSP's strategies to meet its objectives. The PoA therefore features a set of specific time-bound Areas of Interventions (Aols) and activities to guide implementation, coordination among agencies and monitoring. It identifies responsible ministries, departments, and line agencies, specifies the implementation timeframe for each activity as well as indicators to be used in the monitoring.

Preparation of the PoA involved consultations with five inter-ministerial Thematic Teams which include officials from seventeen line ministries/government agencies whose work contributes to food and nutrition security, and with development partners. The draft Plan of Action was shared in multistakeholder consultations involving public and private sector representatives, academia, NGOs and civil society, from March to May 2021, covering all eight divisions of the country, to get feedback from a wide cross-section of stakeholders. These culminated in a national PoA validation workshop in June 2021. These events had to be conducted virtually in view of the prevailing COVID-19 pandemic situation; but all efforts were made to ensure effective participation and close to 500 stakeholders engaged in the process. The PoA has been finalised taking into consideration the additional suggestions and recommendations received during this consultative process.

I wish to emphasize that this Plan of Action is the result of valuable contributions by all stakeholders from the Government, UN agencies, donor agencies, international and national NGOs, Civil Society Organizations, and youth groups. Its monitoring process builds on the existing FNS institutional coordination framework and follows a result-based monitoring mechanism. In short, the NFNSP PoA (2021-2030) provides a roadmap for ensuring food and nutrition security for all as envisaged by the NFNSP (2020).



Md. Shahiduzzaman Faruki

Acronyms and Abbreviations

ADB	Asian Development Bank
ADP	Annual Development Programme
AIS	Agriculture Information Service
AIDS	Acquired Immunodeficiency Syndrome
AIMS	Aid Information Management System
AMIS	Agricultural Market Information System
APA	Annual Performance Agreement
AoI	Area of Intervention
ARDFS	Agriculture, Rural Development and Food Security
ARI	Acute Respiratory Infections
ASEAN	Association of Southeast Asian Nations
ASF	Animal Source Foods
ATI	Agriculture Training Institute
BAB	Bangladesh Accreditation Board
BADC	Bangladesh Agricultural Development Corporation
BAEN	Bangladesh Extension Network
BARC	Bangladesh Agricultural Research Council
BARI	Bangladesh Agricultural Research Institute
BAU	Bangladesh Agricultural University
BB	Bangladesh Bank
BBF	Bangladesh Breastfeeding Foundation
BBS	Bangladesh Bureau of Statistics
BCC	Behaviour Change Communication
BDHS	Bangladesh Demographic and Health Survey
BDP	Bangladesh Delta Plan
BDT	Bangladeshi Taka
BEZA	Bangladesh Economic Zones Authority
BFD	Bangladesh Forest Department
BFRI	Bangladesh Fisheries Research Institute
BFSA	Bangladesh Food Safety Authority
BFSN	Bangladesh Food Safety Network
BHE	Bureau of Health Education
BIGD	BRAC Institute of Governance and Development
BIHS	Bangladesh Integrated Household Survey
BINA	Bangladesh Institute of Nuclear Agriculture
BIRDEM	Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders
BIRTAN	Bangladesh Institute of Research and Training on Applied Nutrition
BJRI	Bangladesh Jute Research Institute
BLRI	Bangladesh Livestock Research Institute
BMDA	Barind Multipurpose Development Authority
BMET	Bureau of Manpower, Employment and Training
BMMS	Bangladesh Maternal Mortality and Health Care Survey
BMS	Breast Milk Substitutes
BNNC	Bangladesh National Nutrition Council
BNYP	Bangladesh National Youth Policy
BRDB	Bangladesh Rural Development Board
BRRRI	Bangladesh Rice Research Institute
BSCIC	Bangladesh Small and Cottage Industries Corporation
BSTI	Bangladesh Standards and Testing Institution
BTE	Bangladesh Technical Education Board

BTTC	Bangladesh Trade and Tariff Commission
BWDB	Bangladesh Water Development Board
BWMRI	Bangladesh Wheat and Maize Research Institute
CAB	Consumers' Association of Bangladesh
CFF	Climate Fiscal Framework
CGAP	Consultative Group to Assist the Poor
CHT	Chattogram Hill Tracts
CIMMYT	International Maize and Wheat Improvement Center
CIP	Country Investment Plan
CIP2	Second Country Investment Plan for Nutrition-Sensitive Food Systems
CMS	Cottage, Micro and Small
CPI	Consumer Price Index
CRA	Climate Resilient Agriculture
CSA	Climate Smart Agriculture
CSAIP	Climate Smart Agriculture Investment Plan
CSOs	Civil Society Organisations
CVF	Climate Vulnerable Forum
DAE	Department of Agricultural Extension
DAM	Department of Agricultural Marketing
DDP	Desirable Dietary Pattern
DEI	Dietary Energy Intake
DER	Disaster Emergency Response
DG	Directorate General
DGHS	Directorate General of Health Services
DG Food	Directorate General of Food
DGFP	Directorate General of Family Planning
DLRS	Department of Land Records and Survey
DLS	Department of Livestock Services
DNCC	District Nutrition Coordination Committees
DoF	Department of Fisheries
DPs	Development Partners
DPHE	Department of Public Health Engineering
DTE	Directorate of Technical Education
DYD	Department of Youth Development
EAS	Extension and Advisory Services
EGPP	Employment Generation Programme for the Poorest
EPI	Expanded Programs for Immunization
ERD	Economic Relations Division
ESCAP	Economic and Social Commission for Asia and the Pacific
ESP	Essential Health Service Package
EUREPGAP	European System Related to Good Agricultural Practice
EZ	Economic Zone
FAO	Food and Agriculture Organization of the United Nations
FBCCI	Federation of Bangladesh Chambers of Commerce and Industry
FCT	Food Composition Table
FBDG	Food Based Dietary Guidelines
FFP	Food Friendly Program
FFW	Food for Work
FIAC	Farmer's Information and Advisory Centre
FIES	Food Insecurity Experience Scale
FLI	Food Loss Index
FTA	Free Trade Agreement
FVC	Food Value Chain

FLW	Food Loss and Waste
FNS	Food and Nutrition Security
FPMA	Food Price Monitoring and Analysis
FPMC	Food Planning and Monitoring Committee
FPMU	Food Planning and Monitoring Unit
FPWG	Food Policy Working Group
FSNIS	Food Security and Nutrition Information Systems
G2P	Government-to-Person
GAFSP	Global Agriculture's Food Security Program
GAIN	Global Alliance for Improved Nutrition
GAP	Good Agricultural Practices
GAqP	Good Aquaculture Practices
GCF	Green Climate Fund
GDDS	General Data Dissemination System
GDP	Gross Domestic Product
GED	General Economics Division
GFSI	Global Food Safety Initiative
GHG	Greenhouse Gas
GHP	Good Hygienic Practices
GIEWS	Global Information and Early Warning System
GMP	Good Manufacturing Practices
GoB	Government of Bangladesh
HACCP	Hazard Analysis and Critical Control Points
HIES	Household Income and Expenditure Survey
HiH	Hand-in-Hand Initiative
HIV	Human Immunodeficiency Virus
HPNSP	Health, Population and Nutrition Sector Programme
HRDC	Hybrid Rice Development Consortium
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
ICN2	Second International Conference on Nutrition
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICT	Information & Communication Technology
ICVGD	Investment Component for Vulnerable Group Development
IFAD	International Fund for Agriculture Development
IFPA	Indicator of Food Price Anomalies
IFPRI	International Food Policy Research Institute
IFST	Institute of Food Science and Technology
IMCI	Integrated Management of Childhood Illness
IMED	Implementation Monitoring and Evaluation Division
IMF	International Monetary Fund
INFOSAN	International Food Safety Authority Network
INFS	Institute of Nutrition and Food Science
INGO	International Non-Governmental Organisation
INM	Integrated Nutrient Management
IPC	Integrated Food Security Phase Classification
IPH	Institute of Public Health
IPHN	Institute of Public Health and Nutrition
IPM	Integrated Pest Management
IPNS	Integrated Plant Nutrition System
IRRI	International Rice Research Institute
IYCF	Infant and Young Child Feeding
JCS	Joint Cooperation Strategy
JICA	Japan International Cooperation Agency
KGF	Krishi Gobeshona Foundation

LCG	Local Consultative Group
LGD	Local Government Division
LGED	Local Government Engineering Department
LT	Long-Term
MAD	Minimum Acceptable Diet
MCS	Monitoring, Control, and Surveillance System
MDD	Minimum Dietary Diversity
MDD-W	Minimum Dietary Diversity for Women
MDG	Millennium Development Goal
MFIs	Microfinance Institutions
MFS	Mobile Financial Service
MICS	Multiple Indicator Cluster Survey
MIS	Management Information System
MMI	Missing Middle Initiative
MMD	Marine Mercantile Department
MoA	Ministry of Agriculture
MoC	Ministry of Commerce
MoEFCC	Ministry of Environment, Forest and Climate Change
MoDMR	Ministry of Disaster Management and Relief
MoE	Ministry of Education
MoHA	Ministry of Home Affairs
MoF	Ministry of Finance
MoFood	Ministry of Food
MoFA	Ministry of Foreign Affairs
MoFL	Ministry of Fisheries and Livestock
MoHFW	Ministry of Health and Family Welfare
MoInd	Ministry of Industries
MoIB	Ministry of Information and Broadcasting
MoL	Ministry of Land
MoLaw	Ministry of Law
MoLE	Ministry of Labor and Employment
MoLGRD&C	Ministry of Local Government, Rural Development and Cooperatives
MoP	Ministry of Planning
MoPA	Ministry of Public Administration
MoPEMR	Ministry of Power, Energy and Mineral Resources
MoPME	Ministry of Primary and Mass Education
MoST	Ministry of Science and Technology
MoU	Memorandum of Understanding
MoWCA	Ministry of Women and Children Affairs
MoWR	Ministry of Water Resources
MoRA	Ministry of Religious Affairs
MR20	CIP2 Monitoring Report 2020
MSEs	Micro and Small Enterprises
MSMEs	Micro, Small and Medium Enterprises
MT	Medium Term
MUCH	Meeting the Undernutrition Challenge
MoYS	Ministry of Youth and Sports
NAP	National Agricultural Policy
NARS	National Agricultural Research System
NBCC	Nutrition Behaviour Change Communication
NBFI	Non-bank Finance Institutions
NC	Nutrition Club
NCB	Nutrition Challenge Badge

NCDs	Non-Communicable Diseases
NCIP	National Council for Intellectual Property
NDA	National Designated Authority
NEET	Not in Education, Employment or Training
NEMC	National Environment Management Council
NFNSP	National Food and Nutrition Security Policy
NFP	National Food Policy
NGOs	Non-Governmental Organisations
NIIPRP	National Innovation and Intellectual Property Rights Policy
NIPN	National Information Platform for Nutrition
NIPORT	National Institute of Population Research and Training
NIPU	Nutrition Information and Planning Unit
NPAN2	Second National Plan of Action for Nutrition
NNP	National Nutrition Policy
NNS	National Nutrition Services
NSPCMD	National Strategy on Prevention and Control of Micronutrient Deficiencies
NSSS	National Social Security Strategy
NSVC	Nutrition-Sensitive Value Chain
NUS	Neglected and Underutilised Species
OMS	Open Market Sales
OP	Operational Plans
PDBF	Palli Daridro Bimochon Foundation
PFDS	Public Food Distribution System
PHC	Primary Health Care
PKSF	Palli Karma-Sahayak Foundation
PLW	Pregnant and Lactating Women
PMO	Prime Minister's Office
POs	Producers' Organizations
PoA	Plan of Action
PoU	Prevalence of Undernourishment
PP2041	Perspective Plan of Bangladesh 2021-2041
PPP	Public Private Partnership
PPPA	Public Private Partnership Authority
ppm	Parts per million
PwD	Persons with Disabilities
RDCD	Rural Development and Cooperatives Division
RTWG	Regional Technical Working Group
R&D	Research and Development
RAKUB	Rajshahi Krishi Unnayan Bank
SAARC	South Asian Association of Regional Cooperation
SBA	Small Business Agency
SBCC	Social Behaviour Change Communication
SDDS	Special Data Dissemination Standards
SDG	Sustainable Development Goal
SEZ	Special Economic Zones
SFB	SAARC Food Bank
SFP	School Feeding Programme
SMART	Specific, Measurable, Achievable, Relevant and Time-bound
SME	Small and Medium Enterprises
SOFI	State of Food Insecurity in the World
SOP	Standard Operating Procedures
SPARS	Strategic Plan of Agriculture and Rural Statistics
SPARRSO	Bangladesh Space Research and Remote Sensing Organization
SRDI	Soil Resource Development Institute

ST	Short-Term
SUN	Scaling Up Nutrition
SVRS	Sample Vital Registration System
TFA	Trade Facilitation Agreement
TR	Test Relief
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TT	Thematic Team
TVET	Technical and Vocational Education and Training
UNCC	Upazila Nutrition Coordination Committee
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNIDO	United Nations Industrial Development Organization
UNICEF	United Nations Children's Fund
UNO	Upazila Nirbahi Officer
USAID	United States Agency for International Development
USD	US Dollar
VGD	Vulnerable Group Development
VGf	Vulnerable Group Feeding
VWB	Vulnerable Women's Benefit
WASA	Water Supply and Sewerage Authority
WASH	Water, Sanitation and Hygiene
WFM	Work for Money
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization
7FYP	Seventh Five Year Plan
8FYP	Eighth Five Year Plan
9FYP	Ninth Five Year Plan

Executive Summary

Recent achievements and emerging challenges in food and nutrition security

In recent years, Bangladesh has achieved commendable results in improving the food and nutrition security (FNS) of its population. The growth rate of food production now exceeds that of population and self-sufficiency in rice production achieved in 1998-99, is sustained and stable. Remarkable progress in poverty reduction, supported by sustained economic growth has improved access to food and enabled Bangladesh to reach the lower middle-income country status in 2015. Largely due to nutrition-sensitive drivers within a wider enabling environment of agriculture and pro-poor economic growth, despite substantial fluctuations, the prevalence of undernourishment (PoU) declined -to 13% in 2019- as did food insecurity as reflected by the Food Insecurity Experience Scale (FIES). Child stunting which reflects chronic malnutrition, decreased by a third over the last 20 years (Table 1). This is attributed to strong associations between household assets, large gains in parental education, and child growth outcomes. Other factors likely to have influenced child nutrition include, improved access to health services, hygiene and sanitation, reduced fertility rates, longer birth intervals and pro poor multisectoral policies.

Building on these remarkable declines, accelerated efforts through comprehensive nutrition sensitive policies can help to meet the national nutrition targets and pave the way for sustainable food systems.

Table 1. Sustainable Development Goal (SDG) 2 : Key indicators and targets

Indicators	2000	2018/19	Target 2030	Source
PoU	20.8%	13%	<10%	FAO, SOFI
FIES	n.a.	31.5%	↓	FAO, SOFI
Child Stunting	44%	28%	15.5%	BDHS, SDG Tracker

Bangladesh still faces daunting challenges to ensure the FNS of its population which is projected to reach over 186 million by 2030. Emerging trends – including those exacerbated by the COVID-19 pandemic – comprise increasing income inequality, scarcity of agricultural labour, the adverse impact of climate change on food productivity, and barriers to accessing safe and nutritious food. Increasing incomes and urbanisation have led to some dietary diversification but the rate has remained slow. Around half of the population still consumes diets deficit in micronutrients, and only a third of young children have minimum acceptable diets. Reduction in child wasting which reflects acute malnutrition in children due to food insecurity arising from seasonal shortages and disasters, regional disparities, poor diet, hygiene and care practices, has shown uneven progress. Besides, the “multiple burden of malnutrition” is pointing to an increase in non-communicable diseases, which needs to be addressed on a priority basis.

Against this backdrop, the Government of Bangladesh (GoB) is committed to achieve FNS for all, at all times, to ensure an active and healthy life. It has also pledged to the global Agenda 2030 for sustainable development that includes ending poverty (SDG-1), and eradicating hunger and food insecurity, and achieving improved nutrition (SDG-2), by 2030.

Making the National Food and Nutrition Security Policy actionable

In continuity with the previous FNS-related policies and investment plans, the National Food and Nutrition Security Policy (NFNSP) approved in August 2020, takes into account the increasing role

of the private sector in food production, processing and marketing, the importance of partnerships, multisectoral convergence, and the enabling role of policymakers. Incentives, legislations and regulations represent the main policy instruments to encourage welfare, food safety, healthy diets and nutrition improvements and changes in the economic decisions of food value chain actors – i.e., farmers, processors, marketers and consumers. The NFNSP also recognises the relevant direct role of the public sector in areas such as procurement and management of public food stock for price stabilisation and social security, hygiene and sanitation, behaviour change communication, and in partnership with the private sector, on investment in agricultural infrastructure, nutrient-dense product development, food fortification/biofortification, and on other specific initiatives of agricultural research and development.

Figure a. Guiding principles

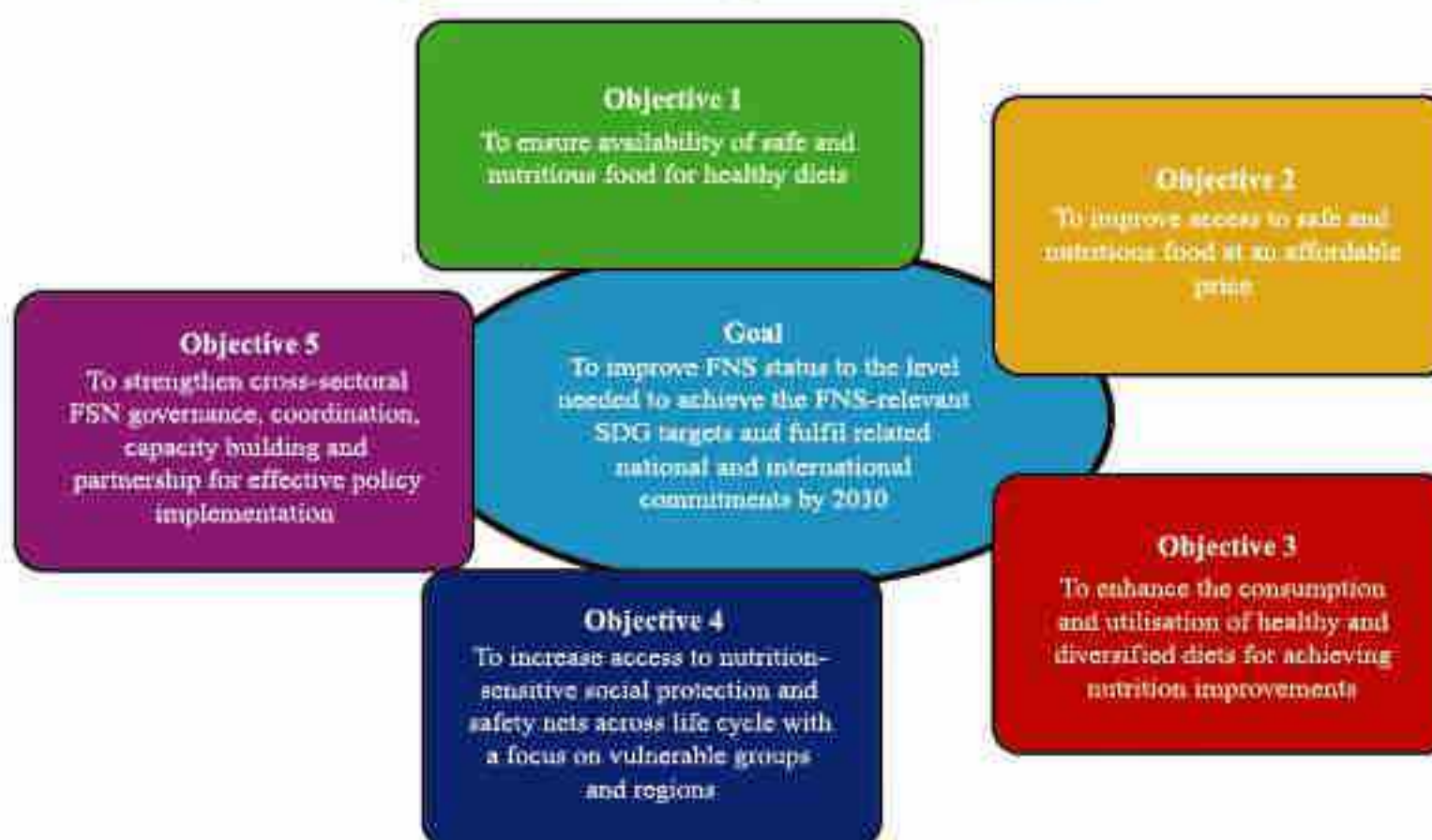


The National Food and Nutrition Security Policy Plan of Action 2021-2030 (PoA) aims to make the NFNSP actionable, by translating the initiatives in the policy into timebound interventions coordinated by relevant GoB agencies. The ten-year PoA covers the Eighth and Ninth Five Year Plan periods and aligns to the GoB priority of achieving FNS-related SDGs and fulfilling relevant national and international commitments by 2030.

The PoA provides a framework to all responsible GoB agencies and FNS stakeholders to ensure effective implementation, coordination and monitoring of the policy, following a set of guiding principles (Figure a).

Coordinated by the Food Planning and Monitoring Unit (FPMU), Ministry of Food, and technically assisted by the Meeting the Undernutrition Challenge (MUCH) project implemented by FAO with funding from USAID and the EU, the PoA formulation process began with a thorough review of the NFNSP initiatives proposed under each strategy, giving rise to 275 priority actions grouped under 64 Areas of

Figure b. Goal and objectives of the NFNSP

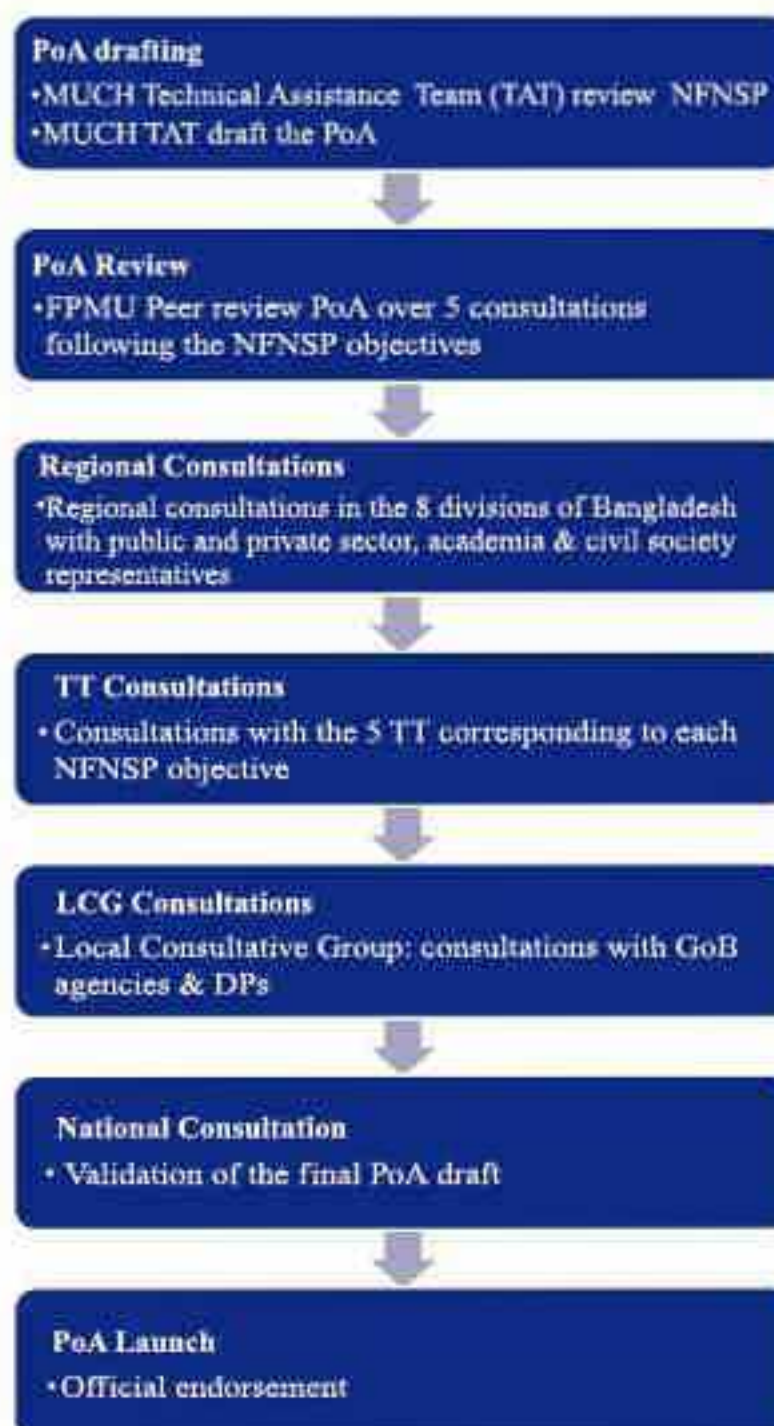


Intervention, across 17 Strategies, under the five objectives (Figure b) of the policy. Extensive consultations with close to 700 relevant stakeholders and partners at local and national level ensued, and the PoA was amended to reflect the recommendations made (Figure c).

Costing and tracking of the PoA investments

A new Country Investment Plan (CIP) will reveal the actual spending on each of the PoA objectives and strategies. Other costing exercises carried out for the relevant SDGs and other programmes and projects may contribute to estimate the spending planned and resource required for the PoA implementation.

Figure c. PoA production process



1. Introduction

The context

This document is the Plan of Action (PoA) to implement the National Food and Nutrition Security Policy (NFNSP), which was approved by the Government of Bangladesh (GoB) in August 2020, and aims to ensure that Bangladesh achieves its food and nutrition security related Sustainable Development Goals (SDGs) and fulfils the relevant national and international commitments by 2030. This is the first time the GoB has formulated an integrated food and nutrition security (FNS) policy. The PoA covers the 10-year period of the Eighth Year Plan (8FYP, July 2020 – June 2025) and Ninth Five Year Plan (9FYP, July 2025 – June 2030).

The five objectives of the NFNSP are:

1. To ensure availability of safe and nutritious food for healthy diets
2. To improve access to safe and nutritious food at an affordable price
3. To enhance the consumption and utilisation of healthy and diversified diets for achieving nutrition improvements
4. To increase access to nutrition-sensitive social protection and safety nets across lifecycle with a focus on vulnerable groups and regions
5. To strengthen cross-sectoral FNS governance, coordination, capacity building and partnership for effective policy implementation

The main precursors of the NFNSP are the National Food Policy 2006 (NFP) and the National Nutrition Policy 2015 (NNP). Since the NFP 2006, the policy context has changed considerably, with the development agenda shifting from the Millennium Development Goals (MDG) to the SDGs. Though Bangladesh achieved its nutrition related MDGs with regard to underweight reduction, wider targets were set under the SDGs that require scaling up and accelerating both nutrition-specific and nutrition-sensitive interventions to impact diets and nutrition. The fact for example, that a third of children were still chronically undernourished with serious negative implications for their long-term health and nutrition. There has been a clear transition from food security to FNS.

Bangladesh has made substantial improvements in the food security and nutritional status of its population. At present, the growth rate of food production exceeds that of population. In terms of per capita calorie availability, self-sufficiency achieved in the food grain production of Bangladesh in the financial year 1998-99 is now sustained and stable. Rising per capita incomes and declining incidence of poverty indicate that access to food has also improved over time. Rapid economic growth, access to health care, parental education, and improved hygiene and sanitation services have enabled Bangladesh to reach the lower middle-income country status in 2015. In addition, the prevalence of undernourishment (PoU) or “hunger” has declined from 20.8% in 1999-2001 to 13% in 2017-2019. Similarly, among under five years of age children, the rate of stunting was 51%, and underweight 43% in 2004, which has been reduced to 28% and 23%, respectively, in 2019. These indicate the country's recent commendable progress in improving FNS.

Despite these recent commendable achievements however, Bangladesh still faces daunting challenges for ensuring FNS of its current population of more than 160 million which is projected to reach over 186 million by 2030. Emerging negative trends could exacerbate the current challenges to ending hunger, achieving food security and improved nutrition, and promoting sustainable agriculture. These include continuing population growth, increasing income inequality, scarcity of agricultural labour resulting from internal and international migration, adverse impact of climate change on food productivity and barriers to access to safe and nutritious food. The COVID-19 pandemic may also have set back some of the progress achieved so far, with long-term effects. The issue of food safety has also

come to the fore due to the increasing geographic separation of consumption and production centres as a result of urbanisation. Increasing incomes and urbanisation have led to some dietary diversification but the rate has been slow and cereals still account for more than 60% of the Dietary Energy Intake (DEI). Diets have remained largely unbalanced with diets of more than 50% of the population being inadequate with deficiencies of vitamin A, calcium, folic acid, zinc and iron. Reduction in child wasting which reflects acute malnutrition in children and is due to food insecurity arising from seasonal shortages and disasters, regional disparities, poor hygiene and care practices, has shown uneven progress. Besides, the “multiple burden of malnutrition” can result in a high incidence of non-communicable diseases (NCDs), if not addressed on a priority basis.

Against this backdrop, the GoB is committed to achieving FNS for all citizens, at all times, to ensure an active and healthy life. It has also pledged to ending poverty (SDG-1), and eradicating hunger and food insecurity, and achieving improved nutrition (SDG-2), by 2030. In addition, it has subscribed to the objectives of the Second International Conference on Nutrition (ICN2) Framework for Action, Scaling Up Nutrition (SUN) Movement and the UN Decade of Action on Nutrition.

The economy of Bangladesh is market-oriented with food production, processing and marketing being largely in the domain of the private sector. The new policy is based on this reality. Hence, incentives and regulations are viewed as the main policy instruments to indirectly encourage changes in the economic decisions of private sector agents such as farmers, processors, marketers and consumers. In addition to this, the policy recognises the potential direct role of the public sector in areas such as procurement and management of public food stock for price stabilisation and social security, and in partnership with the private sector on investment in agricultural infrastructure, product development, or on specific aspects of agricultural Research and Development (R&D).

Guiding principles

A nutrition-sensitive food systems approach

In continuity with the Second Country Investment Plan for Nutrition-Sensitive Food Systems 2016-20 (CIP2), the approach taken in the NFNSP is to consider the food system in its entirety. Such holistic approach is essential to expand opportunities to strengthen nutrition access, enhance the capabilities of individuals to make nutritionally balanced healthy dietary choices and ensure the sustainability of nutritional outcomes. The approach also facilitates the identification and prioritisation of multi-sectoral interventions for synergistic impact. The Policy and PoA promote the use of a “nutrition lens” to assess and prioritise various options for designing multi-sectoral inter-linked interventions that are centred around shaping food systems for improving diets and nutritional outcomes.

Policy consistency

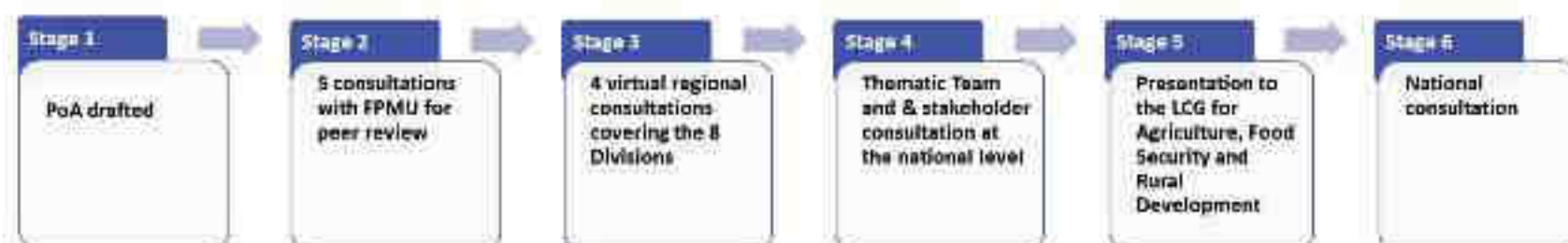
The government commitments and approach to FNS are reflected in the NFNSP which is consistent with all relevant policies that it builds upon and complements. The cross-sectoral nature of the policy dictates that the actions proposed be aligned to the contents of other relevant national policies and sectoral plan documents. Annex 1 lists the national policies, strategic and planning documents cross-referenced in the PoA.

Consultative process

The Meeting the Undernutrition Challenge (MUCH) project implemented by the Food and Agriculture Organization of the United Nations (FAO), assisted the GoB’s Food Planning and Monitoring Unit (FPMU) and Thematic Teams (TTs), in preparing the PoA, by drafting the document and facilitating the consultations. Similar to the NFNSP development process, the PoA is the outcome of multiple rounds of iterative and inclusive consultations with relevant ministries, departments, and agencies, and non-

governmental stakeholders, which includes, academia, civil society organizations and the private sector, at national and subnational levels¹ (Figure 1). Around 700 individuals participated in these consultations. Annex 2 and Annex 3 provide the detail of comments made during the regional, and other stakeholder consultations. Great care has been taken to fill in any gaps that these comments will have helped to identify. This dialogue between stakeholders will continue throughout the life of the PoA, making it a dynamic living document. Adjustments and improvements will be made based on results of monitoring activities, experience gained, and feedback received from national and international stakeholders. Appropriate adjustments will also be made in response to any major strategic reorientation of priorities and plans that may be reflected in the 9FYP.

Figure 1. PoA formulation and consultations



Sustainability

Sustainability lies at the heart of the SDGs and is therefore a recurrent consideration throughout the PoA. Sustainable food systems deliver “food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations

are not compromised. This means that it is profitable throughout (economic sustainability), that it has broad-based benefits for society (social sustainability) and that it has a positive or neutral impact on the natural environment (environmental sustainability).”² The five principles of sustainability proposed by FAO have been integrated to the actions proposed in this document whenever relevant, namely: increase productivity, employment and value addition in food system; protect and enhance natural resources; improve livelihoods and foster inclusive economic growth; enhance the resilience of people, communities and ecosystems; and adapt governance to new challenges.

Focus on women

In order to achieve the goal of the NFNSP, the fact that women and men often have different, if complementary, roles to play needs to be acknowledged and due attention given to the role of women. In Bangladesh, women exceed 50% of the agricultural labour force and they are mostly responsible for producing food on homestead premises. Through their reproductive work, they also influence nutrition of household members and they are responsible for the processing and food preparation as well as the hygiene and health of the family. Their own health and nutritional status have an intergenerational impact on nutrition in that it affects that of the babies they bear. Empowering women is key to tackling malnutrition through the many roles that they hold. For example, control over land and access to inputs and services such as credit, irrigation, rural advisory and extension services needs to be guaranteed and targeted to their needs. Easy access to safe food and water needs to be ensured, as well as access to health services especially for women of reproductive age, pregnant and lactating women (PLW). Information on and sensitisation to adequate nutrition is also key. The PoA has incorporated these considerations throughout the actions proposed under each strategy.

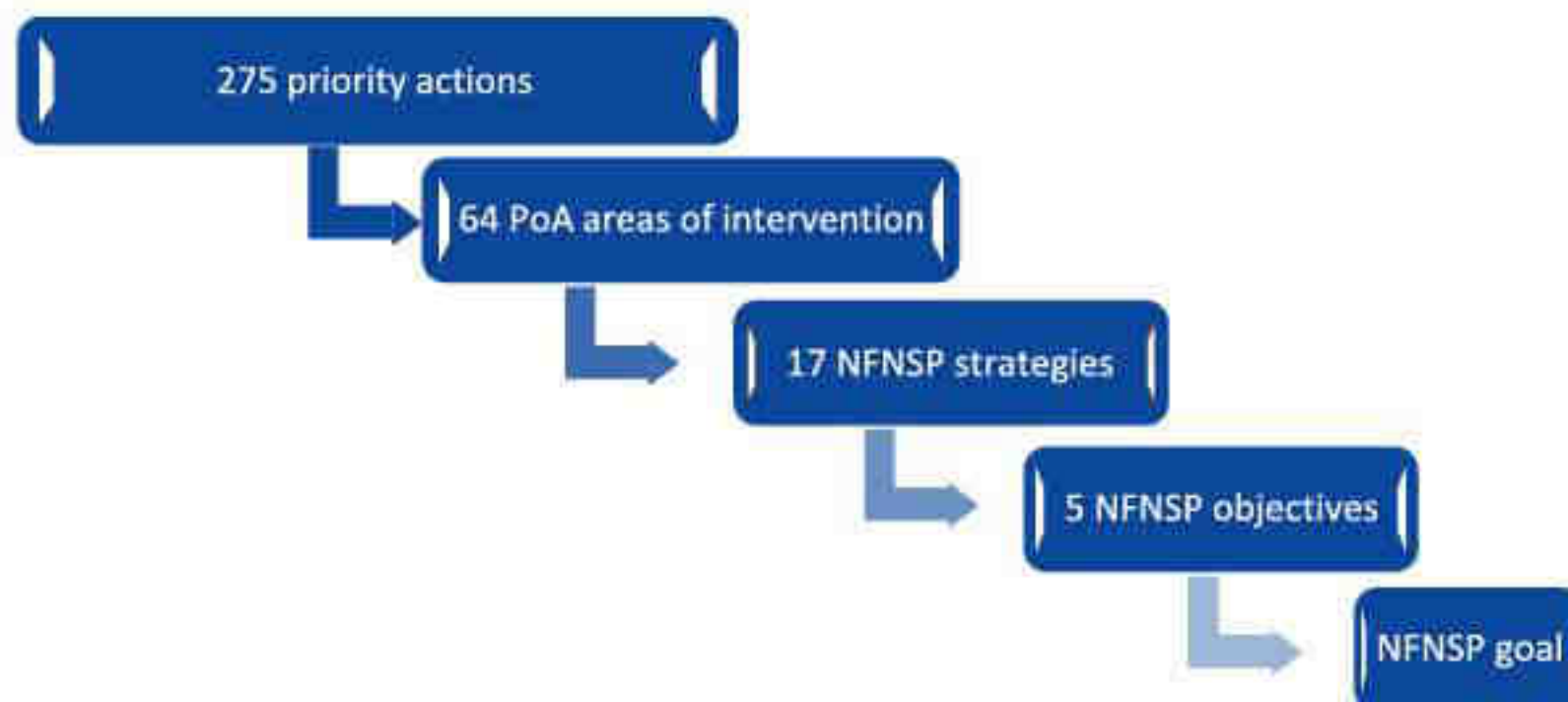
¹ The consultation process had to be adapted to the unusual COVID-19 pandemic conditions and these took place virtually.

² FAO. 2018. Sustainable food systems - Concept and framework

Process

The purpose of the PoA is to translate the policy into a time-bound results-oriented set of priority actions that operationalise the five NFNSP objectives. It provides a guiding framework in key aspects of implementation, coordination, and monitoring by all responsible ministries, agencies, and other stakeholders. The PoA formulation process began with a thorough review of NFNSP initiatives proposed under each strategy in order to articulate 275 priority actions grouped under 64 Areas of Intervention (AoI) across the five objectives and 17 Strategies of the Policy (see Figure 2). Annex 4 lists the AoIs by NFNSP Strategy and Objective.

Figure 2. Logical structure of the PoA



Description of the AoIs

Chapter 2 to 6 of this PoA describes the 64 AoIs proposed. Each defines an “action agenda” consisting of several complementary sets of activities that contribute towards attaining each Strategy and Objective. In addition to a rationale (why is this AoI needed?) and action agenda (what will be done?), each AoI contains a section listing the cross references made to other documents, as well as to other AoIs. The latter reflects the cross-sectoral nature of many of the issues covered in this policy. The review of these documents also identified opportunities for generating synergies among cross-sectoral programs along with actions needed to improve planning, coordination, implementation, and monitoring of such programs. For proper identification of AoIs included in NFNSP, a three-digit numerical system has been used. The first digit refers to the objective, the second digit to the strategy and the third digit to the AoI: e.g., the identifier 2.3.1 refers to the first AoI of the third strategy of the second objective.

Plan of Action implementation matrix

The implementation matrices presented in Chapter 7 provides the basic framework for implementing, coordinating and monitoring of the NFNSP. Each AoI is linked with specific targets and performance indicators. Goal and outcome indicators are also proposed towards the monitoring of the NFNSP goal and five objectives. The matrix also provides the basic reference framework for planning and operationalizing monitoring activities. The actions proposed under each AoI are summarised and a time frame provided. Six components are included in each AoI matrix (see Figure 3):

- **Actions and activities:** These are the actions and associated activities proposed to meet the objective of NFNSP strategies. Cross references are made when activities are consistent with other policy and planning documents or when they contribute to or overlap with other AoIs.

- **Time Frame:** This indicates the start of the activity and the implementation period. The PoA covers the period 2021-2030. Short-term (ST) refers to the immediate years (2021-2025), medium-term (MT) roughly to the second half of the 8FYP (2023-2025) and long-term (LT) roughly to the 9FYP (2025-2030). Action agenda/targets may be modified, or adjusted overtime based on the progress and/or changes in government policy priorities. For an activity starting and being completed within the same time period, only that one time period is shown. These time frames are indicative only and may have to be adapted as activities unfold.
- **Targets:** When relevant, available targets from pre-existing documents have been used (e.g., the Perspective Plan of Bangladesh 2021-2041 (PP2041) or the Second National Plan of Action for Nutrition 2016-2025 (NPAN2)).
- **Indicators:** This is needed to monitor progress over time against the set targets. The indicators need to be Specific, Measurable, Achievable, Relevant and Time-bound (SMART). When appropriate, indicators used in the monitoring of other government plans and programs have been used. This guarantees that these indicators exist and will ease the monitoring process. In some cases, indicators for which the information is not currently available have been suggested because it seems important that the government starts doing so.
- **Means of verification:** These typically are government reports, field surveys, censuses, or other means of obtaining the indicators' data.
- **Responsible actor and stakeholders:** These are the government agencies responsible for implementing any particular AoI (in bold in the matrices), followed by all the stakeholders involved in achieving the target.

Figure 3. Structure of the PoA implementation matrices

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actors and stakeholders
OBJECTIVE 1						
Strategy 1.1						
AoI 1.1.1.						
AoI 1.1.2.						

Costing and tracking of the PoA investments

A new Country Investment Plan (CIP) will reveal the actual spending on each of the objectives and strategies of the PoA as well as the spending planned. Resource requirements for implementing the PoA may partly be assessed from other costing exercises carried out for relevant SDGs and other relevant programmes and projects.

2. Areas of intervention to achieve Objective 1 of the PoA

Objective 1: To ensure the availability of safe and nutritious food for healthy diets

Strategy 1.1. Increase productivity while ensuring sustainable production of cereals and nutritious food including horticulture, fisheries and livestock

AoI 1.1.1. Develop improved climate-smart technologies for productivity gains, agricultural diversification, sustainable intensification, and enhancement of nutrient-content

Rationale

Improved technologies not only increase the overall food availability but also drive the process of diversification towards the production of nutrient-dense foods by releasing scarce resources such as land and labour. The development and spread of high-yielding varieties need to be accelerated, especially for nutrient-dense crops such as pulses, nuts and oilseeds that are experiencing a decrease in production³. By raising the input-use efficiency, improved technologies also promote sustainable intensification as production gains can be achieved by optimizing the timely use of inputs to avoid wastage, water contamination, adverse impact on human health and environmental degradation. Improved technology includes mechanization which it reduces the cost of production in the face of increasing scarcity of farm labour and promotes crop intensification by facilitating timely farming operations such land preparation, planting, and harvesting. Bangladesh is one of the most mechanized agricultural economies in South Asia⁴ mainly through fast expansion of power tillers and groundwater pumps but operations such as planting, weeding, and harvesting are still done manually. Under the National Agriculture Mechanization Policy 2019, farmers will be able to buy machinery at low-cost credit or even through interest-free loans and machinery sub-contracting for the block-based service provision. Climate-smart technologies are needed to reduce production losses likely to result from high frequency of extreme weather patterns induced by climate change, and to facilitate production in coastal and newly developed lands. Improved technologies are needed to increase the availability of micronutrient-dense fruits and vegetables, improved breeds of livestock, poultry, and fish that are high in good quality protein and bioavailable micronutrients. The micronutrient content of crops can also be increased by technologies such as biofortification. Substantial progress has been made in developing rice varieties that are rich in iron, zinc and vitamin A. More bio-fortified crops need to be developed. The Fourth Industrial Revolution that Bangladesh is witnessing, holds much promise including for small farmers, even if much work is needed to develop the skills required to avail of these new technologies.

Action Agenda

1. Develop stress-tolerant high-yielding varieties of major cereals and nutrient-dense crops such as pulses, oilseeds, soybeans, fruits and vegetables (in line with the National Agriculture Policy Plan of Action (NAP PoA) 2020 Programme 1.1. and 3.2)

As the apex of the National Agricultural Research System (NARS) which is composed of 10 research institutes, the Bangladesh Agricultural Research Council (BARC) is responsible for strengthening the national agricultural research capability. These organizations have developed research collaborations with several international agricultural research centres, agricultural universities in Bangladesh, and with various local research entities. The PoA will support and leverage the work of these research institutes. The particular emphasis will be on the development of stress-tolerant rice varieties suited to coastal saline areas, drought-prone north-west region, and submergence-prone low-lying southern delta region.

³ Food Planning and Monitoring Unit (FPMU).2020. Monitoring Report of the Second Country Investment Plan on Food and Nutrition Security 2020. Ministry of Food. Government of Bangladesh

⁴ World Bank. 2020. Promoting agri-food sector transformation in Bangladesh: policy and investment priorities

Several improved rice varieties with these characteristics have been developed and disseminated but this effort needs to be further reinforced to increase the number of varieties suited to diverse farming conditions of Bangladesh⁵. Similarly, improved maize and wheat varieties are being developed by the Bangladesh Wheat and Maize Research Institute (BWMRI) in collaboration with the International Maize and Wheat Improvement Center (CIMMYT). In addition, the Bangladesh Agricultural Research Institute (BARI) is also developing improved varieties of various legume and pulses that are nutrient-rich, in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), as well as orange fleshed sweet potato (*komola sundari*) which is a rich source of Vitamin A. Research by private firms will also be encouraged (as suggested by the PP2041).

2. Improve crop, soil and natural resources management practices including mechanization and “high tech” options to ensure high productivity and sustainability

Similar to the development of improved varieties, the national research institutes are also developing crop, water, soil and natural resource management options adapted to different agro-ecologies of Bangladesh. Examples of these improved technologies include the alternate wetting and drying method for irrigation, fertiliser application based on soil tests, balanced use of organic and inorganic fertilisers, integrated pest management approach to reduce pesticide application, improved methods of weed control, conservation tillage, *sorjan* farming⁶ and mechanization options to overcome labour shortage during periods of peak labour demand such as transplanting and harvesting of rice. Opportunities to increase the efficiency of input use through “high-tech” approaches will be exploited. Investments will be made towards the development of agricultural machinery that is resource and energy efficient, along with the training of farmers. Efforts will be made to customise equipment to the specific needs of Bangladeshi farmers (in line with NAP PoA 2020 Programme 2.2.1).

3. Develop improved breeds of livestock and fish and improved husbandry practices

The livestock sector is the main source of high quality protein in the form of meat, milk and eggs. However, the productivity of livestock in Bangladesh in terms of meat and milk production is extremely low due to their origin from a poor genetic base. In addition, the lack of proper veterinary services and poor quality feed keep their productivity low. So, opportunities exist to increase the productivity of livestock sector through the application of science-led modern methods of breed improvement complemented by the delivery of effective veterinary services, and improved feeding and management systems. Local adapted breeds of livestock could be developed into high-yielding breeds through suitable breeding approaches. Issues of illegal livestock germplasm need to be addressed. The PoA will support and leverage the Bangladesh Livestock Research Institute’s (BLRI) research with particular emphasis on using science-based methods for breed improvement, development of effective veterinary services, feed quality assurance and improvement in feeding practices. A gene bank will be developed for indigenous fish to be conserved and multiplied.

4. Develop biofortification to increase the nutrient-density of major food items

Modern breeding and selection methods permit biofortification through which the bioavailability and the concentration of nutrients in crops can be increased. In contrast to industrial fortification, biofortification genetically adds selected nutrients in crops. Examples are, iron-rich rice, zinc-enriched rice and golden rice (with vitamin A), and orange fleshed sweet potato with high vitamin A content. The Bangladesh Rice Research Institute (BIRRI) and its partners are working to develop such rice and other crop varieties which are evaluated, piloted and taken to the field. Some of these varieties are already in the seed pipeline. The PoA will support and leverage BIRRI’s work to make such varieties readily available to farmers.

⁵ Food Planning and Monitoring Unit (FPMU), 2020. *Op. cit*

⁶ Sorjan farming method combines vegetable crops with fish farms and makes land that is waterlogged during the rainy season but faces drought and salinity in the dry season become productive.

Cross references

- NAP PoA 2020: Program 1.1: Sustainable production of safe and nutritious food; 1.2: Sustainability of production systems and management of natural resources; 1.3: Management of impact of climate change for sustainable agricultural production; 2.2. Appropriate Scale Mechanization and Usage of Clean Renewable Energy in Farm Operations; 3.2 Agricultural research
- PP2041

AoI 1.1.2. Disseminate improved technologies and practices at farmer and farm level through effective and participatory extension services

Rationale

Extension and advisory services (EAS) are crucial for transferring the technologies and skills to diversify agriculture, raise agricultural productivity, strengthen food safety, promote climate change adaptation, and boost value addition and rural incomes, especially in lagging regions. While Bangladesh boasts one of the largest networks of extension frontline personnel who provide training, technologies and services up to the upazila levels, the EAS system is not as effective as needed despite continuing reforms. EAS are provided by a wide range of public, private and civil society actors, but are still woefully stretched. In 2018/19, the Department of Agricultural Extension (DAE), the largest actor, trained 1.8 million farmers on sustainable agriculture.⁷ A typical field-level official in DAE is responsible for 900-2,000 agricultural households, and in the Department of Fisheries (DoF) or the Department of Livestock Services (DLS), 60,000-70,000 agricultural households share two to three officers.^{8,9} The NAP PoA 2020 aims to devise an efficient extension system for fast and effective transfer of technology through its Programme 1.5. Recognising the range of actors, the 2012 National Agriculture Extension Policy emphasizes stronger partnerships, coordination and quality to optimize resources. Consistent to this, aspects of the 2013 National Livestock Extension Policy aims to strengthen research-extension-farmers linkages; mobilise producer organizations to access technologies, information and marketing; and harmonize public and private services. EAS are mostly supply-led, with institutional bottlenecks in the research-extension-farmer linkage, and little accountability. Increased spending based on “value-for-money”, stronger governance and accountability, and better approaches to EAS are needed. Participatory approaches that ensure the research that is produced is needed and used, will lead to greater incomes and demand, thereby creating the required virtuous cycle. More intensified and widespread efforts are needed on inclusion of vulnerable groups, nutrition and climate adaptation.

Action Agenda

1. Strengthen capacities of extension workers to better meet priorities (see AoI 4.2.1 on disaster resilient agriculture, and especially its Action 1 on taking a “hotspot” approach)

This action will ensure that the Government’s service can be more relevant to current priorities and needs of different regions. EAS needs will be mapped (8FYP objective) based on agro-ecological niches, prevailing productivity gap and regional specificity, and relevant knowledge will be drawn through closer links with public agricultural research institutions and universities. Delivery of this knowledge will need strengthened development and training of human resources in extension agencies to ensure that the content of the service is consistent with the mapping and is technologically updated. The issues of focus will be consistent with priorities in the 8FYP and the NAP to promote: sustainable farming practices and diversification on the basis of crop zoning and value addition; appropriate mechanisation; water saving technology and surface water irrigation; *boro* rice cultivation in southern

⁷ Food Planning and Monitoring Unit (FPMU).2020. *Op. cit*

⁸ Huber S. with K. Davis .2017. Bangladesh: Desk Study of Extension and Advisory Services. USAID

⁹ Other public providers of extension services are Agricultural Information Service, Department of Agricultural Marketing, Bangladesh Agricultural Development Corporation.

Bangladesh; salt-tolerant varieties in coastal districts; high value crops in the Barind tracts and hill districts; nutrition-sensitive agriculture; climate-smart agriculture; promotion of Neglected and Underutilised Species (NUS); and use of Information and Communication Technology (ICT) in extension services. Given the shortage of personnel, all district and upazila extension workers should be trained in multidisciplinary skills across livestock, fisheries, and crops EAS.¹⁰ Efforts to promote nutrition-sensitivity will continue in capacity strengthening with EAS training including nutrition education and diversification of homestead production.¹¹ Targeting NUS can play a vital role in nutrition (cross-reference to AoI 1.2.1), and in soil health in some places. The upscaling of mechanisation using power tillers, tractors and threshers in recent years has relied on farmers accessing relevant EAS, and this will be intensified.

2. Increase inclusion of poor farmers, women and youth in extension services (this links to AoI 4.3.4 on “productive social protection”)

This action will ensure that extension services reach out to and are designed to meet the needs of poor farmers, women and youth. Accountability weaknesses mean there is a tendency to provide more services to the richer, large-scale farmers, who are often better connected. The 2012 National Agriculture Extension Policy emphasises the inclusion of poor farmers and women in extension services. The classification of farmers by the Consultative Group to Assist the Poor (CGAP)¹² could be useful to design distinct EAS for differentiated needs. Despite reforms, mainstreaming gender in EAS remains weak and women agriculturalists are under-served.¹³ In addition, given Bangladesh’s demographics in the coming decade, this action will enhance the inclusion of young people in extension services to support the Government’s efforts on rural transformation, such as *amar bari*, *amar khamar* (My house, My Farm) and My Village, My Town programmes. Since poor farmers, women and youth tend to have limited access to land, extension services related to non-land based agricultural activities will be prioritised and improved. An additional way to promote greater inclusion of women in agriculture is for more women to provide EAS, but this will need greater attention and support for the specific mobility, access and other gendered needs of women as EAS providers.¹⁴

3. Strengthen demand-led extension services

This action will promote demand-led, decentralized and local-level planning of extension services to address from the bottom-up institutional bottlenecks in the farmers-extension-research linkage (as emphasised in the 8FYP). The purpose is for EAS to better meet needs with the right knowledge in the right place at the right time. The action will better mainstream participatory extension approaches focused on farmers’ needs, and linked to holistic sustainable farming systems approaches, to iteratively strengthen the farmers-extension-research linkage. The Agricultural Extension Manual outlines practical steps for demand-led and participatory-led extension services, and these need to be implemented better, as well as the strategies in the manual to meet region specific needs in *haor*, *chars*, hill tracts, Barind, and coastal regions. This will need effective coordination between research and extension to transfer new technologies to farmers, private sector entrepreneurs and Non-Governmental Organisations (NGOs). The Agricultural Technical Committees, each covering 2-6 districts in similar agro-ecological zones, will be strengthened.

4. Strengthen public-private-NGO partnerships

This action will develop public-private-NGO partnerships to scale-up extension services, meet diverse extension needs and promote commercialisation of agriculture. The partnerships will focus on greater coordination, mutual support between actors, quality control of services and consistency of services

¹⁰ Zahurul, K., Md. Abu Bakar & Md. Nazrul Islam. 2009. Study of the Implementation Status and Effectiveness of New Agricultural Extension Policy for Technology Adoption. FPMU and FAO

¹¹ Kachelriess-Matthess, S., A. Matthess, A. Stancher, B. Asare, & E.O. Afoakwa. 2016. Promoting Nutrition-sensitive Extension Advisory Services. Note 25. GFRAS Good Practice Notes for Extension and Advisory Services, Lausanne, Switzerland

¹² Anderson J., Moler A. & Kretchun N. 2016. National Survey and Segmentation of Smallholder Households in Bangladesh – Understanding their Demand for Financial, Agricultural and Digital Solutions CGAP Working Paper December 2016

¹³ Mamun-ur-Rashid, M., M. Kamruzzaman & E. Mustafa. 2017. Women Participation in Agricultural Extension Services in Bangladesh. Bangladesh. Journal of Extension Education V29 N1

¹⁴ World Bank. 2019. Bangladesh Climate-Smart Agriculture Investment Plan. World Bank, Washington DC

across places, following the outline in the Agricultural Extension Manual. Some private retailers and agro-processors provide extension services within wider support in “contract farming” systems designed to ensure an adequate supply and quality of produce as required by these companies.¹⁵ Motivated by market incentives, this kind of extension service does not need government support, and the partnerships will aim to ensure that the advice given is consistent with government objectives, such as on sustainability, water management, and social inclusion. In addition, extension and advisory services are provided by other private and NGO actors involved at different specific points in the supply chain, and the government will form partnerships that will emphasise training so that services can be of higher quality and delivered more effectively to farmers.¹⁶ The Bangladesh Extension Network (BAEN) was formed in September 2014 as a platform for extension actors to promote coordination, and could be involved in this action. The district and upazila Agricultural Extension Planning Committees should provide stronger coordination across actors, as well as across crops and non-crops.

5. Enhance the use of ICT

This action will expand the use of ICT for e-agriculture and continue to establish Farmer’s Information and Advisory Centre (FIAC), aiming for full coverage of all unions. This will strengthen the extension-farmers’ information linkage. Also, audio-visual mass media will continue to be used for lower cost communication to communities with lower literacy, and the design of these will need to be sensitive to inclusion of poor farmers, women, and youth, with links to Action 2 of this AoI. To strengthen the research-extension linkage, the action will increase the use of management and information systems (MIS) and ICT-based knowledge management system in service delivery. The National Agricultural Extension Policy 2012 highlights the use of ICT for establishing digitised databases and MIS down to the upazila level. The challenge will be to not only increase the availability of ICT systems, which has been ongoing, but also to ensure they are used for service improvement, e.g., climate services, which links to Action 1 of this AoI on capacity strengthening. Many project-based initiatives and pilots have been undertaken, and the key now is scaling up what works, and ensuring sustainability since the technology and content needs continual updating. Private sector with experience in this area, such as the Bangladesh Institute of ICT in Development, should play a role.¹⁷

Cross references

- NFNSP PoA AoI 1.2.1.; 4.2.1.; 4.3.4.
- National Livestock Extension Policy 2013
- National Agricultural Extension Policy 2012
- NAP PoA 2020: Programme 1.5 Efficient extension system for fast and effective transfer of technology
- DAE Strategic Plan 2002-2006
- Agricultural Extension Manual 2018
- 8FYP 2020-2025

¹⁵ Wadud, F., S.C. Babu & S.I. Afrad. 2015. Private Provision of Extension Through the Contract Farming Approach in Bangladesh: The Case of PRAN. In: Knowledge Driven Development (editors Y. Zhou and S.C. Babu), Syngenta Foundation for Sustainable Agriculture, Basel, Switzerland

¹⁶ USAID. 2017. Public and Private Extension Agents in USAID Agricultural Extension Support Activity Project. USAID. Bangladesh

¹⁷ Malone, P., S.U. Akbar, M. Bell & A.B. Bohn. 2013. Report on the Status of ICT for Agricultural Extension in Bangladesh. USAID. Bangladesh

AoI 1.1.3. Expand and promote the use of water-efficient and environmentally friendly alternative irrigation technologies, including surface irrigation

Rationale

Water scarcity is becoming one of the main constraints to agriculture in Bangladesh. Consumption is increasing with the rise in population and industrial development. Concurrently, water availability is declining: the groundwater table has been dropping up to three metres per year in some areas of the country, and sometimes beyond the suction limit during the dry season. As the lowest riparian country in the Ganges-Brahmaputra-Meghna basin, Bangladesh is largely dependent on other countries for its surface water. In Southern districts, groundwater is affected by salinity, limiting its use for agriculture and drinking purposes¹⁸ (see AoI 4.2.1). Large infrastructure projects taking place in India, dams in particular, are also set to worsen the problem of water availability by decreasing river volumes. In spite of the National Water Policy 1999 and the Water Act 2013 emphasising the sustainability of water delivery through “appropriate legal and financial measures and incentives, including delineation of water rights and water pricing”, this has still not been achieved. These challenges are being exacerbated by climate change. Water scarcity affects poorer farmers more as their limited resources restrict them to irrigating the staple crop, rice. This not only prevents them from cultivating more remunerative crops but it also affects the diversity in the country’s agricultural production. Across the board, inadequate irrigation can hinder diversification with impact on FNS.¹⁹ The current context means that water usage needs to become more efficient, groundwater economised, and surface irrigation used less wastefully. Novel approaches therefore need to be developed, rules and prices reviewed to reflect water scarcity and water-efficient technologies disseminated. The World Bank’s Climate-Smart Agriculture Investment Plan (CSAIP) estimates that with adequate climate-smart measures, water use may be reduced by 40% by 2040 compared to business as usual.

Action Agenda

1. Increase surface water usage, enhance water conservation and increase water use efficiency (in line with NAP PoA 2020 Key Area of Intervention 1.2.2)

Surface water irrigation will be encouraged and rainwater harvested. Rainwater is free from arsenic contamination and salinity. While rainwater harvesting is mostly adapted to drinking, it can serve for irrigation for homestead gardens and in cases of drought. It can also be integrated with hydroponic cultivation instead of irrigation as suggested by the World Bank’s CSAIP for Bangladesh. Construction of new reservoirs and repair of old ones for conservation of rainwater thus needs to be expanded throughout the country and suitable storage developed. Forests should be protected, and tree planting encouraged for their role in balancing the discharge and recharge of water tables. Irrigation methods that consume less water will continue to be disseminated. Alternate wetting and drying for example not only reduces water use but also limits methane emissions. Using buried pipes rather than using open channels minimises evaporation and spills. More focus should be put on rainfed *aus* and *aman* rather than irrigation intensive *boro* rice which accounts for almost 90% of the Consumptive Water Use. In water scarce areas, sprinklers, drips and micro-irrigation should be promoted. Different areas may warrant different approaches such as portable irrigation for vegetables in the *char* areas (see NAP PoA 2020 Key AoI 1.4.4). Reuse of wastewater, especially in peri-urban areas will be seriously looked into

¹⁸ Ministry of Environment and Forests. 2017. Bangladesh Country Investment Plan for Environment, Forestry and Climate Change (2016 – 2021). Government of Bangladesh

¹⁹ Rahman, S. & Kazal, M.M.H. 2015. Determinants of crop diversity in the regions of Bangladesh (1990-2008). Singapore Journal of Tropical Geography. 36: 83-97.

with the necessary adjustments to existing rules and regulations made in order to upkeep safety standards and infrastructure investments made.²⁰

2. Develop and promote new technologies and infrastructure

R&D will continue in collaboration with the private sector to develop new sustainable and energy efficient irrigation technologies learning from other countries' experience. For example, precision irrigation is being developed using sensors that guide the growers as to the exact irrigation needs of different crops. Innovative technologies will be disseminated. ICT-based and digital solutions for irrigation water management will contribute to achieving sustainable water availability for irrigation in the coming decades (PP2041). Concurrently, large infrastructure projects required to ensure country-wide irrigation will continue, including those that upgrade and modernise existing systems. Rubber dams will be built and restored to prevent saltwater intrusion as well as sluice gates to control flood waters. Excavation and re-excavation of canals and rivers have proved to provide good job opportunities for women and reclaimed *khas* land from irrigation projects has been distributed to destitute women, an initiative which should continue²¹. Involvement of the private sector will be sought: the Bangladesh Delta Plan 2100 (BDP 2100) projects that on an average Bangladesh should be able to mobilize at least 0.5% of Gross Domestic Product (GDP) per year from private sector to finance projects of water resource management and related infrastructure. This is important for costly endeavours such as dredging which are not only needed to maintain river navigability and control flows but also for properly functioning irrigation systems.

3. Facilitate access to sustainable irrigation technology

Access to irrigation technology adapted to all size farms and geographies will be promoted by exposing producers to demonstrations, giving them access to finance for necessary investments (in line with AoI 1.1.4), and promoting the formation of groups and cooperatives (in line with AoI 1.1.9) which collectively, can secure better access to infrastructure and ensure its effective maintenance and management (PP2041). Particular attention will be given to increasing rural women's access and participation in irrigation schemes and water management initiatives which are proved to be determinants of improved household livelihood, nutrition and health²² (as per CIP2 Programme I.2). Access to clean and sustainable technologies will be favoured, such as, the promotion of solar powered irrigation pumps (in line with NAP PoA 2020 Key AoI 2.2.2.).

4. Adjust incentives to promote clean, efficient and sustainable irrigation

See AoI 1.1.5 Activity 2.

Cross references

- NFNSP PoA AoI 1.1.4.; 1.1.9.
- NAP PoA 2020: Key AoI 1.2.2. Enhancing Water Conservation & Productivity; 1.4.4. Agriculture in Special Areas; 2.2.2. Clean and Renewable Energy in farm operations and domestic needs of power
- Bangladesh CIP for Environment, Forestry and Climate Change (2016 – 2021), Government of Bangladesh
- PP2041
- BDP 2100
- Bangladesh National Conservation Strategy 2016
- National Water Policy 1999

²⁰ Haldar, K., K.Kujawa-Roeleveld, M. Schoenmakers, D.K. Datta, H.Rijnaarts & J. Vos. 2021. Institutional challenges and stakeholder perception towards planned water reuse in peri-urban agriculture of the Bengal delta. *Journal of Environmental Management* Vol 283

²¹ Ministry of Finance. 2019. *Medium-Term-Budget-Framework- Ministry of Water Resources 2019/20*. Government of Bangladesh

²² Bryan, E. & El Didi, H. 2019 *Guest Commentary - Considering Gender in Irrigation; Technology Adoption for Women Farmers*. Chicago Council on Global Affairs

AoI 1.1.4. Improve timely access to credit, including micro-credit, to small-scale producers through suitable institutional reforms

Rationale

To address the adverse effect of climate change and the SDGs fulfillment, inclusive agricultural finance is essential. Timely increased access to credit is essential to ensure that small-scale producers have the liquidity to both timely operate, and take up the risk of changing their current practices in favor of adopting climate smart technology and diversification. Credit disbursement is uneven across the country: farmers in the *char*, *haor* and less developed areas had less than 1% of the total beneficiaries and the amount of disbursement. Crop sector agricultural credit receives 60% of the total disbursement, and fisheries and livestock sector receive only 10% each, and the rest is by other rural activities. The average size of loans disbursed is small and barely meets farmers' needs. Many farmers who cannot borrow from the formal financial sector, borrow from microfinance institutions (MFIs) but face a number of challenges including high interest rates, credit overlapping, unfavourable repayment periods, and credit ceilings. Suitable institutional reforms are necessary for ensuring the availability and access to agricultural credit in an inclusive and timely manner.

Action Agenda

1. Develop agricultural credit service in a timely manner for the poor, marginalized and small-scale producers through the formal banking system

Bangladesh Bank (BB) along with its public and commercial banks are providing agricultural credit with over 10% growth rate in recent years to almost three million borrowers where 41% are women. However, the credit disbursement is often not done in a timely manner, resulting in underutilization of credit and economic losses. Timely disbursement of credit to the small-scale producers are crucial in this regard and actions need to be undertaken. A recent profiling by CGAP²³ defined the following smallholders farming groups: (i) farming for sustenance; (ii) battling the elements; (iii) option for growth; and (iv) strategic agriculture entrepreneurs (also see AoI 2.2.2). This profiling will be utilized to improve the targeting. The definition of farmer will also need to be reviewed to include farmers so far excluded such as those rearing livestock, honeybees, cultivating mushrooms etc., thus preventing them from availing credit from banks (as per NAP PoA 2020 Key AoI 1.6.1.2).

2. Introduce Krishok Credit Card agent banking and mobile financial services for the agricultural sector (as per NAP PoA 2020 Key AoI 1.6.1.2).

Introducing agent banking and mobile financial service (MFS) may reduce the cost of providing formal credit to the beneficiaries. Bank accounts will be opened for all farmers and Krishok Credit Card distributed to all farmers. Special efforts will be made to ensure women have access too (as per NAP PoA 2020 2.4.4) This formal banking account may be used to take credit, deposit savings, maintain insurance payments and market agri-produce. Recently, Bangladesh Bank allowed the inter-bank service of MFS which will help agent banking to reach out to geographically hard-to-reach areas. However, the implementation of this mode of payment and bank account still needs to be expanded to include all farmers and in particular small-scale producers.

3. Reduce interest rate of microcredit services and increase the grace period of loan repayment with commodity specific calendar

The average loan size of agricultural loans by MFIs is often small with high interest payments. Besides, the loan repayment schedule is not often adapted to the crop calendar. Extending the grace period to take into account expected harvesting times should be promoted. The lower interest rate prescribed by the Central Bank (less than 9%) should be enforced.

²³ Anderson J., Moler A. and Krechten N. 2016. *Op. cit.*

4. Carry out institutional reform in the service provision of agricultural credit, its terms and conditions, and mode of payment

Institutional reform is crucial in the service provision of agricultural credit, its terms and conditions and mode of payment. Bangladesh Bank has suggested a number of changes for the provision of credit service which need to be implemented throughout its affiliated organizations²⁴. Agriculture and rural credit disbursement modalities and its credit programmes in agricultural sub-sectors, its interest rate and the use of modern technologies, credit repayment and monitoring, ease of access to credit for poor and vulnerable people in adverse climatic situations, data generation and reporting, are the most important areas of intervention where institutional reform is necessary. Krishi banks across the country including other institutions providing credit such as, Bangladesh Rural Development Board (BRDB) or Palli Daridro Bimochon Foundation (PDBF), have their own institutional limitations for credit operations. Strengthening these institutions by undertaking reform and inter-connectivity is essential for the development of this sector.

Cross references

- NAP PoA 2020: Key AoI 1.6.1.2 Link scheduled banks for advancing timely credit with a Krishok Credit Card; 2.4.4 Multi-dimensional Role of Women in Agriculture and Gender Equity

AoI 1.1.5. Improve input use efficiency for productivity gains, sustainability, and health and environmental protection

Rationale

Higher input-use efficiency is necessary not only to raise farmer incomes but also to promote sustainable intensification. Increased efficiency of inputs means that more inputs applied are used for productive purposes and less is wasted. Excessive use of chemical fertilisers, pesticides and irrigation is one of the major environmental concerns in the agriculture sector of Bangladesh. The application of these inputs at the right time and in right quantity based on scientific principles will increase the input use efficiency. Fertiliser use in Bangladesh has increased steadily over time, with the application being 289 kg/ha of arable land in 2016²⁵, substantially higher than the south Asia average of 160 kg/ha²⁶. An imbalance in the use of nitrogenous fertilisers relative to potassium and phosphorous is another reason for low efficiency. The low use efficiency of nitrogenous fertilisers in Bangladesh indicates that large proportions are lost to the atmosphere and to the groundwater with major negative health and environmental consequences. The scarcity of water for agricultural use has increased over time due to rapidly increasing demand for water from expanding urban and industrial sectors and the traditional practice of continuous irrigation in rice production. Improvements in water use efficiency in agriculture are thus needed both on economic and environmental grounds. Although the use of insecticides which account for a large share of the total pesticide use has decreased over time in Bangladesh²⁷, substantial adverse impact of toxic pesticides on human health and the environment remain, calling for expanding the use of integrated pest management practices. The lion's share of the total seed requirement is still provided by farmers, although homegrown seeds are typically of poor quality because knowledge about seed production technology, processing and storage is very limited²⁸. Finally, inadequate rights over land and water hamper their sustainable and efficient use and also exclude certain sections of the population.

²⁴ Bangladesh Bank. 2019. Agriculture and Rural Development Credit Policy and Program 2019-20

²⁵ World Bank. 2020. *Op. cit.*

²⁶ *Ibid.*

²⁷ Faruq, A.N. 2018. Agriculture and pesticide consumption in Bangladesh. Paper presented at Conference Effluent Control and Waste Management with Special Emphasis on Biopesticides. Bogor Indonesia.

²⁸ Food Planning and Monitoring Unit (FPMU).2020. *Op. cit.*

Action Agenda

1. Develop and disseminate of knowledge-intensive technologies and practices

The case for increasing the overall agricultural R&D expenditure in Bangladesh is made in AoI 1.2.2. The history of allocation of R&D expenditure in South Asia indicates that the focus of R&D has been on breeding for crop improvements. This is also the case in Bangladesh. In the context of improving the input use efficiency, there is clearly a case for increasing the investments in crop and natural resources management research (in line with NAP PoA 2020 Programme 3.2.1). The scope of such research includes crop agronomy, soil, water and pest management. Improved knowledge-intensive management technologies suited to various crops and agro-ecological zones need to be developed. Currently available technologies include soil test-based application of fertilisers, the use of organic fertilisers, Integrated Pest Management (IPM), alternate wetting and drying method of irrigation. An online advisory system that can be accessed through mobile phones is also being developed by the Soil Resource Development Institute (SRDI)²⁹. These various options will be refined and expanded to cover various regions and cropping systems (in line with the NAP PoA 2020 Key AoI 1.2.1. and 1.2.2). The use of bio-fertilisers and bio-pesticides will be similarly encouraged (in line with the NAP PoA 2020 Key AoI 1.1.1). Efforts will continue to eradicate the sale of unregistered pesticides by bringing the country's pesticide management under a uniform system and by clarifying and implementing the laws on this matter. Emphasis will be given on developing quality seeds (as per NAP PoA 2020 Key AoI 1.1.3) by strengthening capacities of Bangladesh Institute of Nuclear Agriculture (BINA) and BRRI for example, and also training farmers on how to produce quality seeds and store them to preserve them. This should include seeds of regional and ethnic foods prioritised for their nutritional qualities (see AoI 1.2.1). In addition, components of "high-tech" systems (as developed and disseminated under AoI 1.1.1. and 1.1.2) such as nano-technologies, mobile software-based monitoring and field-embedded monitoring sensors will be promoted for increasing both yield and quality of produce. The use of such technologies is currently not widespread for several reasons including the paucity of location-specific recommendations that are easily accessible to farmers. Modern ICT-based approaches including the use of cell phones can be instrumental in improving the access to information. Bangladesh is taking some important initiatives in this direction with attempts to mainstream ICTs throughout the agricultural value chain³⁰. In addition, it is important to develop farmers' capacity to process location-specific information and adjust their management practices to suit the conditions. The traditional top-down extension system using a linear "transfer of technology" approach clearly needs to change towards providing information to farmers and empowering them to make better decisions through capacity building. The PoA will support and leverage the respective components of NAP PoA 2020 and the National Agricultural Extension Policy 2020.

2. Carry out policy reforms to incentivise clean, efficient and sustainable technologies and practices at scale

One of the key reasons for low efficiency of fertiliser use is substantial subsidies provided to fertilisers³¹. Similarly, low marginal cost of irrigation in the prevailing water market has reduced the incentives to save water and use it more efficiently³². In line with the Bangladesh National Conservation Strategy 2016, adequate regulatory frameworks are needed to adjust water and electricity pricing policies, thus providing appropriate incentives. While alternative wetting and drying has been promoted for over a decade, it has not reduced the use of irrigation water to the extent expected because of the lack of economic incentives: indeed, water pricing is based on per unit area irrigated rather than on the amount

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ World Bank. 2020. *Op. cit.* and Food Planning and Monitoring Unit (FPMU).2020. *Op. cit.*

³² Pandey, S., S. Yadav, J. Hellin, J. Balié, H. Bhandari, A. Kumar & M.K. Mondal. 2020. Why Technologies Often Fail to Scale: Policy and Market Failures behind Limited Scaling of Alternate Wetting and Drying in Rice in Bangladesh. *Water*, vol. 12, no. 5

of water used.³³ Meanwhile, subsidies on power have kept the cost of irrigation low and this is likely to have prevented the price system from reflecting water scarcity. A gradual and rationalised reduction in the power subsidised could direct farmers towards a more efficient and sustainable use of this natural resource in irrigation.³⁴

3. Improve access to land and waterbodies and ensure their efficient use

The digital land zoning of Bangladesh will continue, which will contribute to ensuring the most efficient use of land in the country given the competing demands. The land use policy should include availability of land for salt production. Efforts to establish land rights especially for the most vulnerable groups, with a special focus on women will also continue. The role of forests in maintaining the ecological base for food security and as a storehouse of uncultivated crop varieties that may be developed, will be acknowledged, and these resources protected. *Jheels*, common waterbodies and land need to be preserved and their access guaranteed, and social equity issues addressed.

Cross references

- NFNSP PoA AoI 1.1.1; 1.1.2; 1.2.1; 1.2.2.
- NAP PoA 2020: Key AoI Area of Intervention 1.1.1. Productivity convergence for meeting current and future demand of nutritious foods; 1.1.3. Vibrant Seed Sector for Quality Seeds and Planting Materials; 1.2.1. Managing soil health; 1.2.2 Enhancing Water Conservation & Productivity; 1.2.1.6. Promote Integrated Nutrient Management (INM)/Integrated Plant Nutrition System (IPNS) approach of fertiliser application for better soil health and sustainable production; Programme 3.2 Modernizing and Reorienting Agricultural Research

AoI 1.1.6. Promote the production of quality feed and fodder through appropriate support to feed and fodder industries for fisheries and livestock

Rationale

The growth of the fisheries and livestock sector, essential to respond to the dietary needs of the fast growing population, is constrained by the availability of affordable and safe feed and fodder, calling for urgent measures to promote the production of these inputs³⁵. Low profit margins prevail in this sector because of high feed costs. A large proportion of the main ingredients needed to produce feed are imported. Increasing competing demands on land means there is little space left for fodder cultivation and pasture.³⁶ Excessive monsoon flooding linked to climate change experienced in recent years also affects the production and storage of feed. Another constraint is that some of the crops used in modern animal feeds, particularly broiler chickens, are also consumed by humans thus setting up direct competition. Moreover, production and supply mismatches and seasonal availability of feeds and fodders affect animals' nutrition levels³⁷. The quality and safety of the feed and fodder is also an important issue to tackle in Bangladesh³⁸. Adequate fish feed is also not available in required quantities and its safety is often dubious with for example, instances of heavy metal contamination. Antibiotics are still found in poultry feed and used in shrimp farms to keep mortality low and growth high, although their use is banned in Bangladesh. Half of the feed mills operate without registration which makes

³³ Pandey, S., S. Yadav, J. Hellin, J. Balić, H. Bhandari, A. Kumar & M.K. Mondal. 2020. *Op. cit*

³⁴ *Ibid.*

³⁵ FAO. 2007. Economics of aquaculture feeding practices in selected Asian countries. FAO Fisheries Technical Paper 505

³⁶ Kamal, S.M. & T. Jashim .2019. Feed feeds Bangladesh. January. Policy Research Institute of Bangladesh. Policy Insights.

³⁷ Sarker, N.R, S.M.R. Rahman & M.Y.A. Khan. 2019. Feeds & fodder production in Bangladesh: present trend, availability, future requirements and challenges dairying in 2030 International Conference on Dairy

³⁸ Ovi, I.H. & Hussain, A. 2019 Pork product detected in protein imported for use in fish and poultry feed. Dhaka Tribune. 10 September

quality checks challenging. The Safe Food Act 2013/Codex Standards for healthy feeds ensuring the absence of contaminants in feeds for food-producing animals need to be adhered to.

Action Agenda

1. Research and development

R&D will be crucial to develop high yielding and resistant varieties of crops used as feeds such as maize and soybean (see AoI 1.1.1.). Helping to produce the raw materials used in feed will help Bangladesh becomes less reliant on imports and on fluctuations in international prices and changes in import and export policies. R&D will also help identify or further develop techniques of safe feed and fodder production at low cost and throughout the year thus minimising reliance on imports. This will include investigating the possibility and economic feasibility of using non-conventional feed resources and of recycling waste (see AoI 5.2.1). Hydroponics fodder production may also be investigated as a way to respond to fodder needs during the rainy season, as well as salinity-resistant fodder. Methods to maximise the use of available feed resources such as agricultural and agro-industrial by-products, natural pastures and browse will be sought. Supplementation strategies to complement nutritional content of feed at affordable prices will also need to be developed. Research should also focus on improving the feed resources that many smallholders often produce themselves. Fodder conservation practices should be developed to enable a stable supply of feed throughout the year. Low-cost aquaculture feeding techniques that can also help to reduce environmental impacts will also be further developed.

2. Extension services

Extension services will be key to promote the techniques developed through R&D. For example, farmers will be taught to maximise the use of available feed resources and complement poor quality natural pasture as required. Forage production will also be encouraged through means such as the integration of forage with crop cultivation, tree plantation, use of embankments, roadsides, *khas* land, *char* areas, etc. Maize production will be encouraged, especially quality protein maize, given its climate resilience, high yield and reduced need for water (especially compared to *boro* rice). The use of aquatic plants as feed will be encouraged and floating aquaponics for fodder production in *haor* and *char* areas disseminated.

3. Management of the feed and fodder sector

Overall, management of the feed and fodder sector needs to be improved starting with an inventory of existing feeding systems across the country and throughout the year. Surpluses and chronic shortages will be identified to develop feed and fodder banks as well as a fodder seedbank/germplasm at district level. In the medium term, this inventory will guide the production and diversification will help synchronise the needs of animals and the production of feed and fodder. This will allow better planning of imports for which bilateral import negotiations should take place. The registration of all feed sellers will continue³⁹. Involvement of and collaboration between different stakeholders will be promoted. At the government level, ensuring that the feed sector falls under one single regulatory agency rather than several as is currently the case, should help streamline activities.

4. Promotion of the feed industry

Promoting the development of the feed industry will be high in the government's agenda by creating an enabling environment where financing is available, electricity and gas supply is stable, there is access to technology and knowledge, and taxes on raw materials are not crippling. Anti-oligopoly regulations will be considered to ensure that smaller manufacturers are able to enter the market. However, over time, it is likely that feed and fodder requirements will change to adapt to a shift from small-holder subsistence-oriented mixed farm-based extensive traditional livestock systems to medium/large scale

³⁹ The Independent. 2019. Steps taken to bring poultry farmers under registration. 26 January

intensive commercial systems. The nature of the feed and fodder industry will also change as the increasing consumer demand leads to a faster growth in demand for monogastrics (e.g., poultry, fed mainly on protein-rich feed concentrates) relative to ruminants that require more roughages in their diets (beef, goats). The nature of the support will therefore need to be adapted to the evolving needs.

5. Quality and safety assurance

Quality and safety of feed and fodder will be ensured by enhancing the capacity to test and of the infrastructure required. In particular, quality control laboratories should be built including at subnational level. Farms/feed mills/hatcheries will be inspected in order to enforce the Fish Feed and Animal Feed Act 2010. Adequate storage will be developed and disseminated to farmers to prevent damage and deterioration of feed and fodder.

Cross references

- NFNSP PoA AoI 1.1.1.; AoI 5.2.1.
- NAP PoA 2020 Programme 1.1 Sustainable production of safe and nutritious food
- Fish Feed and Animal Feed Act 2010

AoI 1.1.7. Stimulate the blue economy by promoting the sustainable development of marine fisheries and aquaculture in coordination with other non-agricultural uses and the private sector

Rationale

The Blue Economy which is prioritised by the PP2041 to sustainably exploit the ocean ecosystem, comprises activities that directly or indirectly take place in the seas, oceans and coasts using oceanic resources and contribute to sustainable, inclusive economic growth, employment, well-being, while preserving the health of the ocean⁴⁰. This sector's contribution to Bangladesh's gross value added is estimated at 6.2 billion USD or about 3% in 2015, with around 30 million people depending on it. It comprises tourism and recreation (25%), marine capture fisheries and aquaculture (22%), transport (22%), and offshore and oil extraction (19%)⁴¹. While traditional sectors, such as capture fisheries and marine aquaculture will continue playing a prominent role, the potential of new ocean industries – such as marine culture of seaweed and other algae, euglena, mussels, oysters, marine pearls, sea cucumbers, and sea urchins – needs to be assessed⁴². The capture fisheries sector is characterized by weak governance and management to set, monitor and enforce sustainable catch levels. Lack of access to adequate infrastructure, equipment and finance (AoI 1.1.4) to preserve high value catch are further bottlenecks together with the absence of investment-ready enterprises. Against this backdrop, fisher households are among the most vulnerable to poverty, food insecurity and natural shocks (Strategies 4.2 and 4.3).⁴³ To respond to these issues, the Sustainable Coastal and Marine Fisheries Project (2018-2023) aims to sustainably develop the country's enlarged Exclusive Economy Zone. The Ministry of Fisheries and Livestock (MoFL) has also adopted a National Aquaculture Development Strategy and Action Plan of Bangladesh 2013-2020 which includes the sustainable development of marine fisheries resources with involvement of local communities, to promote alternative livelihood opportunities and avoid overexploitation of coastal waters resulting from growing trawl capacity and operations. These

⁴⁰ General Economics Division. 2015. Seventh Five Year Plan 2015-2020. Bangladesh Planning Commission. Government of Bangladesh

⁴¹ P.G. Patil, J. Virdin, C.S. Colgan, M.G. Hussain, P. Failler, and T. Vegh .2018. Toward a Blue Economy: A Pathway for Sustainable Growth in Bangladesh. Washington, DC: The World Bank Group.

⁴² Food Planning and Monitoring Unit (FPMU).2019. Monitoring Report of the Second Country Investment Plan on Food and Nutrition Security 2019. Ministry of Food. Government of Bangladesh

⁴³ World Bank. 2018. "Bangladesh Sustainable Coastal and Marine Fisheries (PAD2473) – Project Appraisal Document, 14 September 2018" Environment and Natural Resources Global Practice. South Asia Region.

initiatives were slowed by the impact of COVID-19 in 2020 on coastal aquaculture and shrimp farming, which received immediate emergency support targeting logistics and supply chain disruptions in the wake of the pandemic⁴⁴.

Action Agenda

1. Support a coordinated policy planning process towards the Blue Economy

The Blue Economy policy planning process should be multisectoral rather than on a sector-by-sector basis. A coordinated and multisectoral approach is needed since the traditional industries, such as marine fisheries, transport, and shipbuilding, are located in, and exploit the same coastal waters and may find Blue Economy opportunities. Developing a common approach and synergies - such as cost-sharing of common infrastructure, cross-fertilisation of technology and innovation - will be essential to build and preserve human and natural capital in coastal areas. The active participation of the actors involved will be needed as well as a stronger coordination mechanism linked with the Planning Commission. To this end, the creation of the Blue Economy Cell established at the Ministry of Power, Energy, and Mineral Resources (MoPEMR) is a positive starting point, and its role needs to be strengthened as a coordination unit encompassing the participation of all relevant sectors.

2. Estimate the potential contribution of the Blue Economy

The Blue Economy is a sustainable ocean economy⁴⁵ where economic opportunities are leveraged with environmental constraints. It relates to SDG 14 - conserve and sustainably use the oceans, seas and marine resources for sustainable development as well as to human food markets, nutraceuticals and animal feed market. In order to adequately assess the value of the Blue Economy, its non-market flows, environmental services and natural capital assets need to be factored in, to be able to adequately prioritise marine activities. The starting point will be the creation of an "Ocean account" by the Bangladesh Bureau of Statistics (BBS). This will consist of designing reliable disaggregated data and defining industries falling by typology and location into the ocean account. The final goal is to transform this account into a Blue Economy account by introducing externalities and assessments of natural capital in coastal areas.

3. Assess stocks and develop national fishery management plans⁴⁶

The DoF will set data and analytical foundations to perform evidence-based fisheries management. In line with the 8FYP, DoF will carry out regular stock surveys on shrimp, demersal and pelagic (especially tuna and tuna like) stocks; and prepare national fisheries management plans, based on zonal and/or species), through a participatory approach.

4. Enable investment in sustainable fisheries

DoF will strengthen fishery policies, regulatory frameworks and institutional capacity to reduce investment risks due to regulatory and enforcement gaps. DoF will conduct awareness-raising programmes. Different fishers' and boat owners' associations (both industrial and artisanal) and relevant government entities, such as the Coast Guard, Navy, Police, Bangladesh Land Port Authority, Chittagong Port Authority and Customs, and other stakeholders will be involved.

⁴⁴ World Bank. 2021. "Bangladesh Sustainable Coastal and Marine Fisheries (P161568) – Implementation Status and Results Report".

⁴⁵ Ocean Economy is defined as the sum of economic activities in ocean-based industries and the assets, goods, and services of marine ecosystems (OECD, 2016 "The Ocean Economy in 2030").

⁴⁶ World Bank. 2021. *Op. cit.*

5. Develop a “Monitor, Control and Surveillance System” and reduce illegal unregulated and unreported fishing

The monitoring, control, and surveillance system (MCS) needs to be strengthened. Less than 3% of the artisanal fleet currently holds valid fishing licenses, and only about 50% of the industrial fleet is subject to partial MCS. To this end, DoF and the Marine Mercantile Department (MMD) will expand and strengthen fishermen identification and fishing vessel registration and licensing. This will be done through the implementation of industrial and artisanal fleet vessels’ monitoring systems, for instance by introducing the Automatic Identification System.

6. Improve infrastructure and production practices⁴⁷

This action aims to close the gap in basic infrastructure - from access to power and water supply (AoI 2.2.3) to postharvest collection and handling facilities (AoI 2.1.1), which are essential to allow fisher communities competitive market access - and in post-harvest practices (avoid quality deterioration and loss of produce) to promote integrated value chain development and compliance with standards. Where feasible, infrastructure investments will focus on “green technology” for seafood production in support of ecosystem services and coastal protection, e.g., mangroves rehabilitation, sea grass and oyster beds. Activities will include the following: infrastructure improvements for capture and culture fisheries; value chain and food safety development (compliance with food safety standards and preserving postharvest value of catch by strengthening DoF’s capacity to monitor and sanction biosecurity compliance); and boosting coastal aquaculture productivity (leverage private sector initiatives to pilot mariculture production and commercialization)

7. Sustain community empowerment and livelihoods^{48, 49}

Through a community-driven approach, this action aims at strengthening fisheries’ management and reducing dependency on artisanal coastal fishing. This will be done by piloting various models of fishing villages, for instance, focusing on mariculture, processing and women’s empowerment (AoI 5.4.2). The following activities will be implemented: adaptive research, training and extension aimed at developing low-input and low-cost mariculture systems (AoI 1.12); supporting fishing community institutions and alternative livelihoods development; and business development and market linkages (AoI, 1.1.9) for alternative livelihoods, with a focus on young women and men.

Cross references

- NFPSP PoA AoI 1.1.2; 1.1.4; 1.1.9.; 2.1.1; 2.2.3; 5.4.2.
- PP2041
- 8FYP 2020-2025
- National Aquaculture Development Strategy and Action Plan of Bangladesh (2013 – 2020)
- The World Bank Bangladesh Sustainable Coastal and Marine Fisheries (P161568)

AoI 1.1.8. Develop and promote eco-friendly and responsible practices for animal health along the principles of “One Health”

Rationale

Good animal husbandry practices at farm level, from procuring and rearing healthy animals, their welfare, to final slaughter or milking, is an essential component of the production of quality and safe food⁵⁰. In Bangladesh, an estimated 25% of the population is directly involved with livestock management, exposing them to diseases and further transmission in the human population. The high

⁴⁷ World Bank. 2021. *Op. cit.*

⁴⁸ World Bank. 2021. *Op. cit.*

⁴⁹ Ministry of Fisheries and Livestock & FAO. 2014. National Aquaculture Development Strategy and Action Plan of Bangladesh 2013-2020. Government of Bangladesh and FAO

⁵⁰ Bhilegaonkar, Rawat & Agarwal. 2014. Food Safety Assurance Systems: Good Animal Husbandry Practice, Encyclopedia of Food Safety, Volume 4, Pages 168-173.

density of, and interaction between humans and livestock, coupled with the fragile and flood-prone ecosystem, increases Bangladesh's risk for zoonotic diseases, emerging and re-emerging infectious diseases and pandemics. Yet, Bangladesh has limited medical and veterinary health services infrastructure. There is a shortage of trained health workers, significant gaps in service provision, frequent drug and commodity stock-outs, and lack of proper information about the health services that are available. Farmers are often unaware and reluctant to use medicines. Since the inception of the National Livestock Policy in 2007, several key areas were identified to address the challenges and encourage harnessing the opportunities for the development of a thriving livestock sector. The National Poultry Development Policy 2008 was formulated to encourage poultry industry and to control quality of inputs for sustainable poultry development. Other policies have been in place to handle animal health and development: the Diseases of Animal Act 2005, the Animal and Animal Product Quarantine Act 2005, the Fish Feed and Animal Feed Act 2010, the Animal Slaughter and Meat Control Act 2011, the 1992 Breeding Policy, and the National Livestock Extension Policy 2013. In 2008, the One Health approach⁵¹ was adopted and in 2012 the Strategic Framework for One Health Approach to Infectious Diseases developed. While this is a big step towards institutionalising this approach for prevention, detection and control of infectious diseases at the human animal ecosystem interface, a lot remains to be done to implement the approach.

Action Agenda

1. Formulate and implement an Outbreak Investigation and Response Strategy Plan and Standard Operating Procedures

A One Health approach to respond to an endemic Outbreak Investigation and Response Strategy Plan and Standard Operating Procedures (SOP) (Output 2.2. under Outcome 2 and Component 2 of the One Health Strategic Framework and Action Plan) needs to be formulated and implemented. Coordination is essential for outbreak preparedness and response, particularly at the operational level. To strengthen the outbreak detection, investigation and response enhanced collaborations need to be made between the human and animal health sectors, and wherever appropriate, the environmental sector as well. The plan needs to be developed in coordination with the Ministry of Health and Family Welfare (MoHFW), MoFL, the Ministry of Agriculture (MoA), Ministry of Environment, Forest and Climate Change (MoEFCC), and the Ministry of Food (MoFood). These ministries need to conduct joint risk analysis and develop a joint action plan that links the plan to the National Disaster Management Plan. The Government needs to make budgetary allocations for coordinated outbreak response with clearly defined roles and responsibilities of the stakeholders which needs to be part of the Outbreak Investigation and Response Strategy Plan. A One Health approach will be needed to combat antimicrobial resistance by integrating environmental, aquatic, and wildlife issues into current approaches.

2. Develop a communication strategy for One Health

Networking and communication are important in providing the necessary support for livestock farmers, local administration and communities. A communication strategy needs to be developed for One Health with specific focus on zoonotic diseases; support is required to enable social and behaviour change communication capacity among the stakeholders and a nationwide outreach programme for the advocacy and dissemination of One Health Strategy needs to be built. Since there is weak coordination between the stakeholders with respect to sharing of information, including government and non-government organizations, processes should be established to enable individuals and communities to develop the knowledge, attitudes and skills to use information in assessing their own situations and to take action for protecting their health, livelihoods and ecosystems against disease conditions.

⁵¹ The "One Health" concept was introduced in Bangladesh in 2007 and has been the key tool to respond to emerging diseases such as avian influenza, anthrax and chikungunya. It is a multidisciplinary collaborative platform to combat the challenges of emerging infectious diseases and other health issues arising at human-animal interface in a complex ecosystem.

3. Develop a standard supply chain for vaccines with robust inventory management

A standard supply chain for vaccines with robust inventory management will be developed using international standards and strict enforcement. Currently, uncertified veterinarians often exploit the lack of information at farmer level⁵². Adequate infrastructure will be built and rules enforced to prevent counterfeiting, tampering, contamination and theft. Capacities to use this infrastructure (laboratories for example) and manage it, will be built. The possibility of community-based animal health workers which has shown promising results in other countries will be explored (as suggested in CSAIP for Bangladesh⁵³). Planning and inventory management will be improved, product flows optimising and waste minimised by designing a track and trace system.

Cross references

- Strategic Framework and Action Plan for the Application of a One Health Approach in Bangladesh (2017 – 2021): Output 2.2. SOPs for surveillance and outbreak investigation under Outcome 2 and Component 2 (Coordinated surveillance)

AoI 1.1.9. Strengthen the role of producers' organizations and cooperatives to reduce the cost of production, improve market access, and increasing the prices received by producers

Rationale

Producers' Organizations (POs) and cooperatives in Bangladesh play a vital role in employment creation, poverty alleviation, and socio-economic development in the agro-food sector both for producers and agents involved further down the value chain (see AoI 2.2.4). They reduce the costs that farmers face, broaden their access to markets and increase the prices they receive thus increasing their competitiveness. The cost of production is lowered through collective management, mechanization, and organized marketing. Such organisations improve market access by offering combined marketing platforms, e-commerce platforms and cold chain management, processing, and packaging services, otherwise out-of-reach for lone smaller farmers. They also help increase the profitability of the producers by promoting contract farming, digital marketing systems, helping to ensure timely input supply and utility services, and extension services. Horizontal cooperation such as the aggregation of production, processing, and marketing activities can lead to economies of scale for farmers and reduce the cost of production and marketing. Cost reduction can also be achieved through the economies of scale achieved in bringing producers together in input management and technical assistance, as well as in commercial logistic management. Mechanization is another important area of cost reduction for agricultural produce. POs and cooperatives may ease market entry barriers for processing high-value and nutritious foods such as milk, meat, and fish, providing the required legal and compliance status such as sanitary certifications, environmental compliance certifications, and business registrations. The role of POs and cooperatives is clear in the context of Bangladesh and has been recognised with the existence of a National Cooperative Policy 2012 and the creation of a Rural Development and Cooperatives Division (RDCD). Yet the cooperative movement has weakened over the past few decades and many farmer organizations have become inactive⁵⁴, requiring measures to revive it.

⁵² World Bank. 2019. Bangladesh Climate-Smart Agriculture Investment Plan.

⁵³ *Ibid.*

⁵⁴ Milovanović, V. and Smutka, L. 2016. Cooperative farming and food security within rural Bangladesh. Agrarian Perspectives XXV. Global and European Challenges for Food Production, Agribusiness and the Rural Economy, Proceedings of the 25th International Scientific Conference, 14-16 September 2016, Prague, Czech Republic

Action Agenda

1. Ease the registration process of POs and cooperatives

POs and cooperatives' registration process should be easy and fast-tracked. Compliance in registering is limited as organization sometimes lack the documentation required or understanding of the procedures. The development of a digital registration system may help in this regard.

2. Increase financial services and other ancillaries for POs and cooperatives (see AoI 1.1.4)

Access to financial services such as credit and insurance services should be increased for POs and cooperatives. Substantial loans can be procured through such organisations towards, for example, market infrastructure, the development of transportation facilities, cold-chain management, or storage capacity improvement. Low-cost credit services may be provided towards the development of nutrition-sensitive value chains (NSVC). Necessary ancillary services such as financial literacy training may also be provided as appropriate.

3. Increase training and build capacity of POs and cooperatives

Training and capacity building are required to strengthen the POs and cooperatives based on a needs assessment. Improving their internal structure and organization such as their decision-making processes, rules and regulations setting, information sharing modalities, and system of compensation should be given priority in strengthening their capacity. It is also essential to build capacity to negotiate and develop proposals in order to build coordination process and contractual relations.

4. Adapt support to POs and cooperatives to their diverse needs

The diversity of POs and cooperatives is also an important indicator of balanced growth of the food and agricultural sector. The different needs that arise in remote rural areas and peri-urban areas must be addressed properly. In remote rural areas, POs and cooperatives require very different support as their market connections and economic opportunities are very different from those of peri-urban areas.

Cross references

- NFNSP PoA AoI 1.1.4.; 2.2.4.

Strategy 1.2 Scale up nutrition-sensitive diversification of food production

AoI 1.2.1. Promote diversification into horticulture, fisheries, livestock, poultry and dairy products with high nutrient and micronutrient content including regional and ethnic foods

Rationale

Agricultural diversification is the basis for diversified diets with high nutrient and micronutrient content. Increased supply of nutritious products encourages consumption by making them more accessible to the poor and directly improves their nutritional status. It also indirectly improves the nutritional status of poor farmers through the income pathway as farmers earn more income by selling such high value products. The pace of diversification has been slow in Bangladesh. Cereal crops still account for over 50% of the agricultural GDP⁵⁵, with the livestock sector remaining stagnant at around 10%. The predominance of the crop sector is largely due to rice production which still accounts for a third of the total food value added. The fisheries sector has, however, shown some growth in its agricultural GDP share and holds much potential for future growth. Agricultural diversification is a market-driven process with farmers responding to increased market demand for high-value food products with income growth. Diversification and commercialisation of agriculture tend to reinforce each other. Interventions that improve the marketing systems (such as marketing infrastructure, cold

⁵⁵ Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit.*

chains, and market information) facilitate commercialisation and, in doing so, support the process of diversification. Similarly, interventions that enhance farmers' ability to make informed choices regarding new products and manage the risk involved in such new activities efficiently tend to facilitate diversification and ultimately, commercialisation. The drive for increased diversification also needs to include regional and ethnic foods which often fall under the NUS: not only do they often have superior nutritional qualities, but they also require limited inputs, can be grown on marginal lands and are easily intercropped or rotated with staple crops, and easily fit into integrated practices such as agro-ecology⁵⁶.

Action Agenda

1. Develop and disseminate improved production technologies for non-cereals crops and animal source food

The broader aspect of this component is discussed in some detail in the context of AoI 1.1.1. All those interventions are equally applicable here as well. As the focus is on diversification, the emphasis here will be in identifying innovations and new crop combinations that improve productivity at the systems level by exploiting complementarity among production activities. An example would be to grow a leguminous catch crop that takes advantage of residual soil moisture and nitrogen after rice harvest. Similarly, opportunities may exist to use the poultry manure to supplement fertilisers. Such complementarity in resource use promotes diversification.

2. Reduce risk through promotion of contract farming

Risk averse farmers may consider cash-input intensive production of commercial crops such as fruit and vegetables too risky due to their perishable nature and uncertain prices. Contract farming helps to reduce such risks to the farmer by transferring some of these risks to the contracting company and should therefore be encouraged. Although these contractual arrangements are between private sector entities, the Government needs to design regulations that ensure transparency, fairness, and enforceability of such contracts.

3. Invest in marketing, storage, and processing infrastructures for facilitating rapid access to markets while minimizing the losses in transit

This component is discussed in detail in AoI 2.1.1. While most of these investments may be made by the private sector, there is clearly a role for public sector investment in creating public goods such as farm-to-market road, establishing and regulating local market yards, and promoting private sector investments through public-private partnerships, credit support and regulatory support.

4. Establish agricultural marketing information systems

This component is discussed in detail in the context of AoI 2.2.5. An efficient agricultural marketing information system that can provide easily understood reliable marketing information in a timely manner is essential for supporting market-oriented diversification. Clearly, ICT-based approaches have a major role in this context.

5. Promote the cultivation of regional and ethnic foods (as suggested by NPAN2 Key Action Area 6.2.1 and following NAP PoA 2020 Program 1.4)

Regional and ethnic foods that are particularly nutrient-dense should be identified for their production and consumption (see AoI 3.2.1) to be prioritised and promoted⁵⁷. The CIP2 Monitoring Report (MR20) recommends that NUS -often synonymous with ethnic and regional foods- be promoted through Food-Based Dietary Guidelines (FBDG). Furthermore, the Food Composition Tables (FCTs), must document the nutrient composition of such foods. The collection and conservation of germplasm

⁵⁶ Li, X. & Siddique, K.H.M. 2018. Future Smart Food - Rediscovering hidden treasures of neglected and underutilized species for Zero Hunger in Asia. Bangkok. FAO

⁵⁷ Such work has already been initiated by BARI as seen in the Bangladesh chapter in Li and Siddique (2018) quoted above.

of prioritised foods should be strengthened, and genetic diversity should be exploited in breeding programmes for developing high yielding varieties with tolerance to biotic and abiotic stresses⁵⁸.

Cross references

- NFNSP PoA AoIs 1.1.1; 1.2.5.; 2.1.1.; 2.2.5; 3.2.1.
- NAP PoA 2020: Programme 1.4: Agriculture in special geographical areas
- NPAN2 Key Action Area 6.2.1 Strengthening of integrated homestead food production with emphasis on indigenous, underutilized and nutritious varieties/species/breeds) and gender sensitive and climate smart technologies

AoI 1.2.2. Increase funding and improve efficiency of R&D for sustainable agriculture

Rationale

The critical role of improved technologies in increasing the availability of staple cereals and nutrient-dense food is established in AoI 1.1.1. The focus here is on investments in R&D needed to generate such technologies rapidly and the institutional setup needed to increase the overall efficiency of the R&D process. The current level of funding in agricultural R&D in Bangladesh is low relative to the gross value of agricultural products. For each USD 100 worth of agricultural products, the country spends only USD 0.38 in agricultural R&D, far below the UN recommended target of 1% of agricultural GDP for developing countries. Recent data indicate that the share of agricultural research expenditures in the total agricultural budget dropped significantly in 2018/19 from the level in 2015/16⁵⁹. Increased funding is needed not only to establish modern research facilities and infrastructure, but also to upgrade the quality and scope of agricultural education for building an appropriately trained pool of agricultural scientists for the future. In addition to raising the research intensity, there is a need to redress the current imbalance in the allocation of research expenditure to crop, livestock and fisheries sectors which currently accounts for 53% of the total R&D expenditure. Within the crop sector, the allocation to pulses and oilseeds may need to be increased from the current total combined share of 9% only. The efficiency and effectiveness of the multi-institutional research system is constrained by several factors including the limited authority of the apex organization (BARC) over fund allocation, poor linkages with agricultural universities in the conduct of research, limited collaboration across research centres, and somewhat bureaucratic operational procedures.⁶⁰ The research system requires implementation of reforms to overcome these constraints and improve its efficiency and effectiveness.

Action Agenda

The action agenda to implement this AoI is largely captured in Program 3.1 of the NAP PoA 2020 (Quality Investment in Agricultural Research for Development).

1. Boost budget allocation for public sector R&D

The NAP PoA 2020 proposes a 20% increase in R&D budget per year for the next five years. This will bring the research intensity close to the attainable value of 0.76, but still short of the target of 1% of the agricultural GDP. Funding should be directed to areas priority areas flagged in this PoA and other strategic government documents. Together with this, policy reforms are needed to incentivise private sector investments, especially in proprietary technologies such as the development of hybrid varieties of nutrient-dense vegetables and fruits. Capacities to carry out research will need to be further

⁵⁸ As suggested by BARI in Li and Siddique (2018) quoted above.

⁵⁹ Food Planning and Monitoring Unit (FPMU), 2020. *Op. cit.*

⁶⁰ Kabir, W. & Md.I. Saiyed (eds). 2011. National Agricultural Research System in SAARC Countries- An Analysis of System Diversity. SAARC Agriculture Centre

developed notably in academia with special emphasis on advanced and novel fields such as gene editing, nanotechnology, or advanced breeding techniques.

2. Promote R&D funding for non-staple nutrient-dense agricultural products

The second area of intervention is to redress the imbalance in the allocation of research funding to staple cereals vis-à-vis nutrient-dense agricultural products such as pulses, oilseeds, nuts, meat, eggs, and fish. As Bangladesh has already achieved self-sufficiency in rice, it is an opportune time to accelerate diversification to other crops by increasing the R&D support for improved technologies for the production of nutrient-dense foods. Similarly, increased support to regional research centres in hills, *char*, Barind, *haor* and coastal areas to address specific constraints in these areas is another dimension for improving the balance of the R&D investment portfolio.

3. Carry out institutional reforms in the NARS

Major constraints that have limited the effectiveness and efficiency of NARS have been identified already but the actual reform process has been slow. These reform areas include: (a) improving the coordination, monitoring and evaluation of research programs across NARS institutes, notably between BRRI, BARI and BINA; and (b) improving the autonomy and accountability of NARS institutes. The situation is expected to improve as Thematic Area 3 of the NAP PoA 2020 is implemented. The current PoA will support and leverage the work done under the NAP PoA 2020. The final area of intervention is strengthening the human resource development of NARS. The potential sets of activities include (a) investing in increasing the scientific strength through sponsoring more researchers for advanced degrees; (b) focusing the training programs in new high potential areas such as biotechnology, geographic information systems, nano-technology and ICT; and (c) building a stronger linkage between research institutes and agricultural universities. The PoA will build on research capacity strengthening efforts of the National Agricultural Technology Project (NATP).

Cross references

- NFNSP PoA AoI 1.1.1.
- NAP PoA 2020: Programme 1.1 Sustainable production of safe and nutritious food; 3.1 Quality Investment in Agricultural Research for Development; Thematic Area 3: Investment in modernisation of agricultural research, education, and extension

AoI 1.2.3. Improve the availability of safe nutritious food through innovation and expansion of appropriate methods of urban-based food production

Rationale

In Bangladesh, urban populations experience multiple forms of malnutrition -undernutrition and micronutrient deficiencies on the one hand, and overweight and obesity on the other- more acutely than rural ones. Currently, nearly one-third of Bangladesh's population lives in towns and cities and this is only set to increase as the country advances towards the status of middle-income country, calling for adequate policies to meet the FNS of urban dwellers. Urban households purchase almost all their food. This makes their access to food reliant on retail markets to offer diversified, affordable, safe and nutritious food. Urban food availability is undergoing profound transformation, progressively shifting from traditional foods and markets towards increasing availability of processed foods, fast-foods, foods that are cheap, energy dense and nutrient poor, and modern retailing of food. An important consequence of this transformation is that food supply chains to urban areas are longer and more complex and this makes them subject to various risks of food contamination (in storage, processing, transport, retail, restaurants, etc.). Long supply chains, with more actors and longer transport can increase food prices, require additional infrastructure, such as for storage, and increase in Food Loss and Waste (FLW). Urban and peri-urban food production can shorten the supply chain. To accommodate the limited space and land available, practices such as rooftop gardening must be promoted and innovations such as vertical gardens using hydroponics developed and disseminated.

Action Agenda

1. Promote rooftop gardening and microgardens

Rooftop gardening in urban areas has become popular in recent years as a reaction to widespread contamination and adulteration of food. The COVID-19 pandemic also contributed to the expansion of this practice as it provided a reliable and sustainable source of nutritious food at a time where food chains were disrupted because of the national lockdown and prices skyrocketed. For some, it even became an alternative source of food. Incentives for more households to adopt this practice will be given, also for its positive impacts on the environment. Concurrently, demonstrations will be carried out (see NAP PoA 2020 AoI 1.4.1). Microgardens, also called “precision decision gardening”, that fit in very small farming plots such as balconies, small yards and rooftops in urban settings, also offer high-yield opportunities to grow leafy green vegetables and other high-value food crops. Containers such as plastic-lined wooden boxes, trash cans and even old car tyres can be used for microgardens, making it accessible to modest households. Widespread information and training can be provided to encourage widespread adoption. Microgardens are ideal to grow microgreens which require very little space. These are vegetable greens (not sprouts or shoots) which are harvested just after the cotyledon leaves have developed. They are an excellent source of micronutrients and nutritional compounds like antioxidants, and dietary fibre. They often contain higher vitamin, mineral, fibre and antioxidant levels than the same quantity of mature greens for which they need to be popularised on a large scale.

2. Popularise vertical farming

Vertical farming, a means to tackle limited land availability, is still in an early stage of development in Bangladesh and needs to be scaled up in urban settings (see NAP PoA 2020 AoI 1.4.1). This technique has the potential to slash transport costs and CO₂, as well as reduce the spoilage associated with transporting food from rural areas. Other advantages to this type of farming are avoidance of climatic shocks, disasters and pests, water recycling, provision of energy to the grid through the methane generation from compost and the creation of jobs in urban areas. Not all crops are suited to vertical farming and research is needed to expand the range of fruits, crops and vegetables that are suited to this approach. Setting up vertical farms requires higher investment and also entails procurement of specialized inputs and availability of technologies such as LED lights, drip irrigation and airflow controllers, which need to be made available locally. Research must be carried out to make this technology more affordable and less power hungry.⁶¹ Vertical farming can help replace some of the unsustainable agricultural practices that have been presenting threat to species and ecosystems, especially in high salinity areas such as in the South. The private sector is involved in this, but there is scope for encouraging R&D and strengthening cooperation between the private sector and the Government.

3. Expand the use of hydroponics and aquaponics

Training will be delivered to different stakeholders to impart knowledge and skills on how to use hydroponics in a safe and sustainable way. This technique will be expanded as it allows cultivation in limited spaces. Other advantages are the absence of weeds, other soil-borne pests, and toxic pesticide residue, and year-round production. BARI's work on assisting farmers in cultivating vegetables in abandoned ponds and water bodies to make floating beds will be further expanded. Aquaponics, a system of growing crops and fish together in a recirculating water system, will also be promoted with adequate training imparted to avoid waterborne diseases. This system allows the production of both

⁶¹ Benke, K. & Tomkins, B. 2017. Future food-production systems: vertical farming and controlled-environment agriculture. Sustainability: Science, Practice and Policy, 13:1, 13-26

vegetables and fish with no soil, no fertilisers or pesticides. The setup cost for aquaponics is substantial - unlike the recurring costs associated with it- and will need financing.

4. Boost R&D for urban and peri-urban agriculture

R&D to develop other techniques will be carried out and encouraged to enhance urban and peri-urban agriculture and cooperation between government agencies, non-state research institutes and the private sector, enabled with the right incentives. These actions should be developed alongside measures taken under Strategies 3.1 and 3.2, that aim to develop a long-term national plan for ensuring safe, nutritious and sustainable diets and enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe and nutritious diets.

Cross references

- NFNSP Strategies 3.1.; 3.2.
- NAP PoA 2020: AoI 1.4.1: Strengthening urban horticulture and vertical farming

3. Areas of intervention to achieve Objective 2 of the PoA

Objective 2: To ensure access to safe and nutritious food at an affordable price

Strategy 2.1 Improve market access and stabilize food markets

AoI 2.1.1. Promote the establishment, improvement and management of post-harvest marketing infrastructure and processing facilities for horticultural products, pulses and legumes, livestock and fisheries

Rationale

Post-harvest infrastructure and processing facilities for fruits, vegetables, non-cereal crops, livestock and fishery products are key to reducing risk and improving farmers' income, enhancing access to safe and nutrient dense foods for consumers, and reducing FLW. Marketing infrastructure include rural roads, railways, cold transportation and storage, growth centres and rural markets. As of 2020, there were more than 400 private cold storage facilities for potatoes but cold transportation and storage facilities for other perishables were still insufficient. Supermarket retailers are most likely to have an interest and resources to invest in refrigerated transportation facilities, temperature-controlled warehouses and distribution centres. Processing facilities can be: *primary*, typically on-farm and commonly used to prepare crops for storage and further processing (e.g., washing, peeling, drying, slicing), thereby ensuring that crops do not spoil; *secondary*, ensuring the conversion of ingredients into edible products; and *tertiary*, for the production of prepared convenience foods. Farm processing facilities have the potential to increase value addition at the farmgate and - coupled with the mainstreaming of producers' associations and farmers' centres - can contribute to improving farmers' knowhow, knowledge, technology and bargaining power. Large scale processors are already engaged with secondary and tertiary processing which includes improved packaging - from materials utilized, to technologies to reduce food contamination along the assembly line (AoI 2.3.1) - and aligns with the post-harvest loss reduction strategy (Strategy 5.2). The creation of an enabling environment for food processing (AoI 2.2.3) and securing property rights (AoI 2.1.4) are important drivers of the profitability for private investments and innovation, targeted as essential elements in the PP2041 for agroprocessing. Proper planning (short, medium and long-term), management and allocation of adequate resources are necessary to ensure post-harvest infrastructure and processing facilities development. To this end, establishing private-public partnerships is essential.

Action Agenda

1. Support the expansion and maintenance of transportation infrastructure at both national and local level

Bangladesh will boost connectivity between different transport modalities, and will strengthen arterial transport corridors, and bypass and connecting roads. The PP2041 aims to equip every village with a climate resilient core road network. This will be adapted to the geographical idiosyncrasies: for example, submerged and elevated roads will be built in *haor* areas. Collaboration between the government and Development Partners (DPs) - and notably the Asian Development Bank (ADB), committed to support the financing of infrastructural development in the country- will continue. While roads, including feeder roads, will continue to be developed, land constraints, environmental concerns and cost considerations will mean a greater emphasis on inland water transport and railways, which both remain under-utilised (as per the PP2041). Thus, emphasis will be given to investments towards major programmes of railway upgrading, intermodal transport connectivity, including in *char* areas, and river dredging to enable river transportation. Moreover, improvements in key land ports such as the Panchagarh land port connecting to India, Nepal and Bhutan- will ensure increased volume of exports.

These infrastructural improvements will benefit development of NSVC tremendously by connecting rural and production areas with large markets.

2. Facilitate the establishment, improvement, management and maintenance of cold storage and transportation facilities for perishable nutrient rich foods (as per AoI 5.2.1 and 5.2.2)

Storage facilities will be expanded rapidly for perishable foods in the coming years. Private sector actors have started establishing cold chains in certain subsectors (e.g., Bengal Meat Logistic Company, and potato subsector); this will be stimulated in other sectors also such as, fisheries, in a coordinated manner through Private Public Partnerships (PPP), especially involving supermarket retailers. PPPs associated with adequate traceability mechanisms and regulatory frameworks (AoI 5.1.2) will ensure both innovation and compliance to food safety standards. They will be essential to ensure establishment and maintenance of regional market hubs, cold storages, warehouses, modern growth centres, union parishad complexes and cold chain transportation facilities (including through railway cool chains).

3. Invest in the establishment of processing infrastructure, including on-farm, and storage facilities

While the private sector is investing significantly in processing and improved marketing to meet a growing domestic demand, access to knowhow and technology must also be provided to small producers to facilitate processing, including on-farm, to prevent produce from spoiling and nutrient content loss (see AoI 5.2.1 and AoI 5.2.2.). Adequate processing opens up market opportunities by allowing produce to be sold further, including abroad, and with greater time lags without spoilage.

Cross references

- NFPSP PoA AoI 2.1.6; AoI 2.3.3; Strategy 5.2; AoI 5.2.1; AoI 5.2.2; AoI 5.5.3
- PP2041

AoI 2.1.2. Set up financial intermediation services with improved access to credit for agro-processors along with other complementary services

Rationale

Improved access to credit is essential to develop NSVC at both primary production (see AoI 1.1.4) and agroprocessing and marketing levels. To ensure that Micro, Small and Medium Enterprises (MSMEs) are able to invest in process and product innovations, in marketing infrastructure (such as growth centers) and processing facilities, financing is needed through mechanisms such as credit, savings, and insurance products. For example, the dearth of low-temperature storage facilities and cool transportation facilities for perishables are of serious concern in Bangladesh; appropriate financial initiatives such as credit and insurance schemes would help fill this gap, thereby tackling the problem of food losses and preservation of food nutrients (AoI 2.1.1). Yet the challenges to accessing finance along the food value chains (FVCs) reflect those faced by farmers: from high interest rates, to the need for collaterals, poor diversity in financial products and services to meet the different types of demand.⁶² This is coupled with rural users showing a preference for informal lenders, the main agents operating in the FVC, who are able to quickly respond to the growing demand for financing. Initiatives exist to finance agro-MSMEs: for example, Bangladesh Krishi Bank and the Rajshahi Krishi Unnayan Bank (RAKUB) have special credit programmes to promote entrepreneurship in small agro-enterprises. Public finance alone cannot respond to the needs and private finance must be tapped into. Complementing financial services with technical assistance, mobile financial services, credit guarantee schemes, and quality compliance services can enhance their value to the beneficiaries.

⁶² World Bank. 2020. Promising Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities.

Action Agenda

1. Adapt financial services to the needs of post-harvest FVCs

Steps will be taken to improve the credit market through a range of measures including credit bureaus, credit guarantee schemes, and a range of FinTech initiatives, in order to improve credit market information, reduce compliance and information costs and lower credit risk with particular focus on the poor (as per the PP2041). In this regard, the 8FYP proposes to convert the SME Foundation (the Small and Medium Enterprises (SME) financing window of the Bangladesh Bank) into Small Business Agency (SBA)- a one-stop platform with one of the key functions being improved access to institutional credit. Novel payment systems such as a digitized payment system will be further developed to expand MSMEs' financial access through mobile financial services. Commercial loans should be considered regardless of their value to include even the smallest entrepreneurs. Innovative tools like warehouse receipt financing for post-harvest financing will be developed, collaterals demanded should move beyond the current property-based collateral. For example, the collateral registry's mandate could be expanded to also include moveable collateral such as machineries and equipment.⁶³ While so far the legal and regulatory structure of the mobile-payments system is restrictive by only allowing for a bank-led model, the system should be expanded to include a broader range of financial services.⁶⁴ Efforts will need to be made to improve the insolvency and debt resolution solution for MSMEs, for instance by providing dedicated lines of credit to marketing-processing cooperatives and associations whereby the groups jointly guarantee the loans (AoI 2.2.1).

2. Expand financial services to develop agro-processing activities, with a particular focus on rural areas and women

Financing facilities must be expanded to allow the development of agro-processing activities. In the spirit of "leaving no one behind" advocated by the PP2041, efforts should be made to expand access to financing -both bank and non-bank- to those traditionally excluded especially in rural areas, and women in particular. Innovative approaches will be developed. For example, growth centres may become self-sustaining using the revenues generated. Growth centres will be established in each upazila in order, among other things, to facilitate credit (in line with NAP PoA 2020 AoI 1.6.1 and AoI 3.1.2). The establishment of growth centres by POs in particular, will be incentivized. Finance will also be directed at E-commerce platforms, digital marketplaces and individual sellers whose development will be encouraged beyond Dhaka and other urban areas. Financial support is also essential if MSMEs are to improve their practices (for example by adopting Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP), Hazard Analysis and Critical Control Points (HACCP), ISO certification, etc.) for ensuring food safety. It is essential to increase the credit facilities to the MSMEs in the FVC to support the acquisition of post-harvest technologies such as plastic crates for bulk packaging, harvesting tools, hot water treatment tank to eliminate pests and diseases. Encouraging MSMEs to link up with each other (AoI 2.2.1) and create groups and associations (AoI 2.2.4) should also help facilitate their financial inclusion.

3. Develop insurance services for MSMEs and other risk financing

Increased investment in insurance services for MSMEs and risk financing in the FVC is essential for establishing NSVC. Insurance services with clientele-friendly premium services and other complementary services will be developed. Existing microinsurance developed by MFIs will be invigorated and its coverage extended. Other types of risk financing mechanism such as credit guarantee schemes and crowdfunding platform will be launched to create opportunities for equity financing for microenterprises, marketing-processing cooperatives and associations. Risk financing mechanism should include risk-sharing facilities which offer partial credit guarantees that partially offset loan losses

⁶³ *Ibid.*

⁶⁴ As suggested by World Bank and PRI. 2019. Financing Solutions For Micro, Small And Medium Enterprises In Bangladesh

by private financial intermediaries upon the ultimate beneficiary's default. This allows to leverage public resources, alleviate enterprise collateral constraints and reduce the project risk⁶⁵.

Cross references

1. NFNSP PoA AoI 1.1.4; 2.1.1; 2.2.1; 2.2.4; 3.1.2
2. NAP PoA2020: Key AoI NAP PoA 1.6.1. Establishing "Growth Centre" in each upazila for facilitating access to credit, quality inputs, sale of agricultural produce, temporary storage and marketing
3. PP2041
4. 8FYP 2020-2025

AoI 2.1.3. Maintain an orderly market management by securing property rights, regulating competition, and stabilizing prices

Rationale

Improving market access and stabilising food markets requires maintaining orderly market management systems. This can be achieved by adequately protecting property rights and incentivizing competition. By securing property rights, conditions are created to generate return on investments. Patenting in the agro-food sector in Bangladesh is applicable to various agricultural stakeholders such as input providers (seeds, germplasm, transgenic plants animals), cold chain technology and food processing technology (e.g., to stabilise colour and improve taste)⁶⁶. Avoiding inefficiencies related to market dominance and entry barriers by promoting competition and ensuring symmetric access to information is essential for newcomers to invest. A positive enabling environment for investment (see AoI 2.2.3) and for innovation, could generate large investments in the food sector in the near future. However, according to the Global Innovation index 2020 of the World Intellectual Property Organization (WIPO), Bangladesh is still underperforming in innovation in relation to its level of per capita GDP, with a low level of intellectual property receipts⁶⁷. Intellectual property rights' enforcement is therefore needed to ensure innovation⁶⁸. Concurrently, private investments, if not carefully regulated, are likely to generate dominant positions in certain subsectors, to increase price volatility (see also AoI 2.1.2, 2.2.5), which would in turn threaten the livelihood of small-scale farmers (see Strategy 4.3), lower the food quality (Strategy 2.3) and limit consumers' rights. Different food industries have different degree of concentration and receive different incentives and subsidies from the Government. The structure and concentration of the various food sub-sectors vary and are essential parameters that need to be monitored. Ensuring transparency and fairness in the attribution of public contracts and procurement in general is also needed for an orderly market. Finally, with regard to foodgrain markets, the Government needs to continue stabilising prices through its Open Market Sales (OMS).

Action Agenda

In line with the PP2041 and the desired "*enhanced public sector role in (...) strengthened competition policies in a largely deregulated market economy*":

⁶⁵ *Ibid.*

⁶⁶ Food Planning and Monitoring Unit (FPMU).2020. *Op. cit*

⁶⁷ WIPO, 2020. Global Innovation Index

⁶⁸ General Economics Division, 2020. Perspective Plan of Bangladesh 2021-2041. Bangladesh Planning Commission. Ministry of Planning, Government of the People's Republic of Bangladesh.

1. Conduct an ecosystem analysis to assess and monitor the degree of competition and potential dominant positions in strategic agro sub-sectors

“To prevent, control and eradicate collusion, monopoly, oligopoly or abuse of dominant position or any competitive practices in the market”, the Bangladesh Competition Commission⁶⁹ was established in 2012 but has yet to become fully operational. With the goal of strengthening competition by ensuring access opportunities to newcomers, the ecosystem analysis aims to measure the competition intensity and product differentiation and to assess the need and opportunity to grant property right protection. It will include the analysis of sectoral entry barriers by their category: legal (patents/licenses), technical (high start-up, transaction costs, investment costs; monopoly; technical knowledge); strategic (predatory pricing/ first mover/incumbent positioning); brand loyalty. This will constitute a benchmark for future reference for the Bangladesh Competition Commission and the National Council for Intellectual Property (NCIP) and its monitoring will be under the responsibility of the Ministry of Commerce (MoC) in collaboration with the Ministry of Industries (MoInd), MoA, and the Department of Agricultural Marketing (DAM). The ecosystem analysis should be regularly performed to identify reforms needed to ensure adequate competition within food sectors.

2. Operationalise the Bangladesh Competition Commission, in particular for the agro-food sector and subsectors

Sector-specific guidelines will be established to ensure competition and adequate regulatory mechanisms (e.g., procurement system or the restructuring of some inefficient sectors such as sugar production). The Commission should be equipped with adequate human and financial resources. The 68% projected increase in its budget over the period 2017-18 to 2021-22 is trivial compared to a four-fold increase in the MoC budget. The Commission must be independent and publicly funded and international institutions may provide technical support.

3. Operationalise the National Innovation and Intellectual Property Right Policy in particular for the food industry

In line with the PP2041 which stresses that *“the current degree of innovation in developing countries is low due to poor protection and enforcement of intellectual property rights”* and with the goal of the National Innovation and Intellectual Property Rights Policy (NIIPRP, 2018) to *“Create Intellectual Property and derive economics and commercial benefits from its use”*, the NCIP will be made responsible for facilitating policy coherence between the NIIPRP and the relevant national and sectoral development policies. In particular, NCIP will need to closely collaborate with the MoC, MoA, the Department of Patents, Designs and Trademarks of the MoInd, and the Bangladesh Competition Commission, to ensure innovation and technological adoption within the agri-food industry. A roadmap will be developed to ensure policy implementation, monitoring and adequate financing. Key sector specific indicators will be developed accordingly once this roadmap is developed. To this end, comparative reviews, field research, surveys and interviews aimed at understanding stakeholders’ perceptions of the various policy options available under the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement will need to be carried out.

4. Continue strengthening the public procurement system⁷⁰

Bangladesh boasts a robust public procurement system regulated by the Public Procurement Act 2006 and the Public Procurement Rules 2008. A nodal agency, the Central Procurement Technical Unit, under the Implementation Monitoring and Evaluation Division (IMED), has also been established. The last decade saw a sizeable drive, in capacity development of procurement officials and bidders and the entire procurement process has been brought online. However, in order to ensure transparency and accountability in public contracts and fairness in the selection process of participants in government or

⁶⁹ Bangladesh Competition Commission

⁷⁰ See World Bank. 2020. Bangladesh Assessment of Bangladesh Public Procurement System. Governance Global Practice. South Asia Region

public purchases, these efforts need to continue. For example, the legal framework needs to be assessed against an internationally accepted benchmark and monitoring of the application of the rules strengthened.

5. Update and enforce the Agricultural Produce Markets Regulation Act

The Agricultural Produce Markets Regulation Act (1964), amended in 1985, empowers DAM to issue licenses to market officials to operate in a notified market. Under this Act, district level Market Advisory Committees regulate market practices and fix market charges for different kinds of agricultural produce; they also maintain a set of standard weights and measures; and they undertake arbitration in respect of disputes between purchasers and sellers. The Act needs to be amended to handle current unethical practices of market functionaries.

6. Improve the operation of public stocks, procurement and management for price stabilisation

The Government uses public food stock acquired through public procurement to intervene in the market for price stabilization ensuring that prices are high enough for producers but low enough for consumers. Managing the procurement process and ensuring that there is adequate storage space needs to be ensured in such a way that potential distortionary effects on the grain market are minimised. Developing PPPs to this effect may be considered. Food stock acquisition by the Government also serves Public Food Distribution. Details of the actions proposed here are therefore given in Strategy 4.1.

Cross references

- NFNSP PoA AoI 2.1.2.; 2.2.4.; 2.2.5.; NFNSP Strategies 2.3.; 4.1; 4.3.
- PP2041
- NIIPRP, 2018

AoI 2.1.4. Ensure trade liberalisation and facilitation to support the supply of quality food at all times

Rationale

Access to food is achieved by ensuring that food products are physically and economically accessible to consumers. This implies short-term actions aiming at alleviating sudden shortfalls in domestic production and long-term provision of food and productive inputs (such as seeds, fertilisers and machineries) “structurally” lacking in the national production systems via imports. Strategies to ensure economic access include preserving the purchasing power of the poorest and most vulnerable and can be supported by stabilizing food prices (see AoI 2.1.3 and Strategy 4.1) and by incentivizing food exports. In this context, the PP2041 predicts that trade liberalisation will continue, and trade facilitation will reduce the cost and increase the speed of trade. This also aims at boosting regional food trade among South Asian countries which is currently at around 6.2% of their regional trade⁷¹. The production of rice has doubled over the last two decades and the recent market liberalisation measures enabled private traders to import rice thereby compensating shortfalls in domestic availability. Higher yielding maize has gradually replaced wheat production whose imports continue. While agricultural trade deregulation and liberalization measures have taken place since the 1990s, Bangladesh still lags behind in the trade of seed, fertilisers, machinery and agriculture products compared to its regional peers⁷². For instance, it can take up to 150 hours -against a 45-hour regional

⁷¹ Rahman M., Bari E., Farin S.M. 2018. Operationalizing the SAARC Food Bank: Issues and Solutions. UNESCAP, November

⁷² World Bank, 2019. Enabling the Business of Agriculture 2019.

average- to obtain mandatory agricultural related documents to be able to trade⁷³. Against this backdrop, Bangladesh signed the World Trade Organization (WTO) Trade Facilitation Agreement (TFA) on 29 August 2017. While this is predicted to boost exports by 13% and reduce trade cost by 33% with a potential savings of more than 0.7 billion USD per year for Bangladesh, trade liberalisation and facilitation efforts to ensure the supply of quality food at all times need to continue.

Action Agenda

1. Sustain transparency in trade facilitation in particular for agricultural SME⁷⁴

This action aims to: 1. make available import-export related information on the Bangladesh trade portal, in particular for agricultural SMEs 2. expedite consultations among stakeholders on new draft regulations; 3. inform traders on new regulations before these become effective; 4. ensure timely advance ruling on trade ⁷⁵.

2. Strengthen institutional arrangements and cooperation at national level

Operationalization of TFA means simplified paperwork, harmonized customs requirements, goods clearance expedition, transit facilitation, customs cooperation and capacity building. This is predicted to boost exports by 13% and reduce trade cost by 33% with a potential savings of more than 0.7 billion USD per year for Bangladesh⁷⁶. Accordingly, this action -aligned with Strategy 5.5- aims at ensuring the necessary support to the Free Trade Agreement (FTA) wing and the Bangladesh Trade and Tariff Commission (BTTC) from the national agencies involved at various levels with food trade, including the MoC, MoA and Customs authorities. A unit to facilitate and monitor FTA for cereals, cash crops and agricultural inputs will be formed/strengthened.

3. Enable paperless trade

This action consists in supporting the simplification and harmonization of trade procedures through trade digitalization. It is essential that activities, practices and formalities involved in the collection, presentation, communication and processing of data and other information required for the movement of goods in international trade are simplified and harmonized to international standards. Trade digitalization constitutes an objective that will tremendously benefit trade procedures, untap the national export potential and allow to bridge the gap with other countries. To this end, the operationalization of the framework agreement on facilitating cross-border paperless trade in Asia and the Pacific, in line with the voluntary UN treaty (2016) for Economic and Social Commission for Asia and the Pacific (ESCAP) countries, will be ensured⁷⁷.

4. Support budget and capacity development of the Ministry of Commerce and other key institutions

To ensure that MoC and other related institutions, such as FTA wing, BTTC, Customs authorities, are technically operational, they will be supported with adequate financial and capacity development support.

⁷³ World Bank. 2020. Promoting Agri-Food Sector Transformation in Bangladesh – Policy and Investment Priorities

⁷⁴ OECD and UNESCAP. 2017. Indicators for Trade Facilitation: A Handbook

⁷⁵ "Advance rulings are binding decisions by Customs at the request of the person concerned on specific particulars in relation to the intended importation or exportation of goods." For more information: UN. 2012. Trade Facilitation Implementation Guide

⁷⁶ UNESCAP, 2019. How trade facilitation could support Bangladesh: Beyond LDC Graduation, June 2019.

⁷⁷ *Ibid.*

5. Stabilise food trade partnerships with key food exporting countries through foreign trade agreements especially within the South Asian Association of Regional Cooperation (SAARC) region

Due to both increasing wages and population growth, internal food demand has steadily risen, with national production capacity unable to keep up with internal demand. These trends translated in three-fold increase in imports over a 10-year period to 10.7 billion USD in 2017⁷⁸ and in a widened food trade deficit for Bangladesh. This action accordingly aims to ensure timely imports to support national food access. This entails accurate food price and volume monitoring by the Price Monitoring Cell of the MoC and DAM (see also Strategy 5.3). The Government regulates food imports both directly (for grains) and indirectly (by facilitating private actors' import operations). To this end, long term agreements with key food trade partners, leveraging on regional associations (e.g., SAARC, ESCAP) need to be ensured in order to support stability of trade.

6. Support the operationalization of SAARC Food Bank⁷⁹

To boost food trade and stabilize food access in the South Asia region, the SAARC Food Bank (SFB) was established in 2007 to deploy foodgrain reserves into areas in South Asia experiencing food emergencies and shortages. However, SFB is faced with various challenges including: inadequate volume of reserves, absence of agreed pricing modalities, lack of dedicated funds and information sharing⁸⁰. This action accordingly aims at stabilizing availability and food access and consists of the following interventions: 1. Support evidence-based policy amendments: evidence showed that the threshold criteria of 8 percent admissible production shortfall to receive support from SFB prevented member countries to obtain support. The decision to remove the criteria was therefore a good achievement and similar measures will be taken; 2. Enhance regional trade will increase the access to food in SAARC member countries with less pressure on the SFB; 3. Revised Pricing strategy should include “deferred payment”; 4. Need for additional provision to SFB. 5. New institutional and distribution mechanisms; 6. Ensure political commitment.

7. Optimise export support policies based on FVC comparative advantage and specialisation

Food and beverage exports have intensified in recent years to BDT 112,119 million in 2019, - up by 62% from 2015, with the fish, crustacean and other aquatic products holding the largest albeit shrinking share⁸¹. However, there is much scope for improvement to sustain exports. Despite the government commitment to support exports, the related subsidy -providing 20% free on-board value-has not yet fully translated into improved exports. For instance, potato exports have fallen sharply in the last five years due to both price and quality competition. This has demonstrated the need to repurpose the export subsidy⁸². Moreover, nine cash crops (jute, rapeseed, garlic, sesame, cotton, fish, spices, tobacco and spinach) show promising prospects in terms of export competitiveness – measured according to their revealed comparative advantage⁸³. For instance, Bangladesh is the eighth largest mango producer in the world, which makes expanding exports of mango and related processed products, viable and potentially profitable. Other market niches such as beekeeping and fruit processing (e.g., fruit leather) may be considered. Careful monitoring of the ongoing supportive measures to the export sectors should be performed and adjusted based on the sub-sectors' needs (in line with Strategy 2.3). A review of the competitiveness and performance of export-oriented food sectors and generation of the revealed comparative advantage for the nine cash crops will be performed regularly to ensure adequacy of the

⁷⁸ World Bank, 2020. Promoting Agri-Food Sector Transformation in Bangladesh – Policy and Investment Priorities

⁷⁹ Rahman M., Bari E., Farin S.M. 2018. Operationalizing the SAARC Food Bank: Issues and Solutions. UNESCAP, November

⁸⁰ *Ibid.*

⁸¹ Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit*

⁸² World Bank, 2020. Promoting Agri-Food Sector Transformation in Bangladesh – Policy and Investment Priorities

⁸³ The revealed comparative advantage provides a measure of the net competitive performance (as it excludes subsidies).

policy instruments in place. A similar monitoring system will be applied to import substitution practices when possible and appropriate. Trade liberalisation would benefit export-oriented sectors while import-competing activities are likely to suffer from it. This needs to be carefully assessed and a mechanism to compensate the “losers” of food trade liberalisation implemented.

Cross references

- NFNSP Strategy 2.3; 4.1; 5.3; 5.5; AoI 2.1.3

Strategy 2.2 Improve value chain and marketing systems

AoI 2.2.1. Stimulate innovation-led efficiency gains in food value chains by shortening the chain, improving cooperation among agents, and by reducing food losses and waste

Rationale

Innovation-led productivity growth represents a core strategy to achieve the PP2041 targets in all sectors, including agro-processing. Although very broad in its scope, four main components of this approach are⁸⁴: research and education, business and enterprises (Strategy 2.2), bridging institutions (Strategy 5.5) and the enabling environment (AoI 2.2.3), which includes securing property rights and promoting competition (AoI 2.1.3) and incentivizing the role of private investments, for instance through innovation hubs and PPPs (AoI 2.3.3). Innovation is a process. As such, it includes multiple actors and requires their cooperation which often results in the transfer of know-how and the formation of human capital. However, in Bangladesh, the lack of well-established processors, formal distributors or exporters still limit knowledge transfer and high-quality standards in agro-food markets.⁸⁵ Moreover, FVC distribution and marketing are mainly informal with the associated challenges of inadequate infrastructure (AoI 2.1.1) and lack of quality and food safety standard enforcement (AoI 5.1.1)⁸⁶. The fragmented structure of FVCs - except for maize - is also responsible for high transaction costs for farmers and high levels of food loss, food safety issues and reduced investments. Moreover, the lack of a digital payment system at each value chain stage hinders accountability and traceability and the access of MSMEs to finance (AoI 2.1.2), which enables innovation and risk taking. Lack of innovation in shortening the value chain and limited cooperation among agents are also impediments to guarantee the availability of safe and nutritious foods.

Action Agenda

1. Promote the adoption of digital invoices and value chain inventory management

The adoption of a technological platform hosting digital invoices and order maintenance can bring efficiency gains in FVCs⁸⁷. These innovative technologies - including the government-prescribed Electronic Cash Register and Point of Sale - the automatic sale system - may also stimulate tax revenue generation by promoting a Value Added Tax (VAT) automation process. Accordingly, Electronic Fiscal Devices was to be mainstreamed by the National Board of Revenue, starting with the installation of 10,000 of them by June 2021, and progressively replacing traditional cash registers⁸⁸.

2. Promote innovative solutions to shorten food value chains

The shortening of FVCs, especially for perishable foods, will be promoted by incentivizing the formal distribution channels through the registration of the value chain actors⁸⁹. Supporting contract farming

⁸⁴ FAO's work on agricultural innovation – Sowing the seeds of transformation to achieve the SDGs (2018)

⁸⁵ World Bank. 2020. Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities.

⁸⁶ *Ibid.*

⁸⁷ World Bank. 2019. Financing solutions for micro, small and medium enterprises in Bangladesh

⁸⁸ Dhaka Tribune. 2020. Govt to put its foot down on collecting VAT

⁸⁹ Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit*

and the establishment of produce corners in markets (including organic produce) may also contribute to reducing the number of FVC actors and will be therefore incentivized. Besides, the enforcement of food safety standards will be strengthened and accompanied by consumer awareness and sensitization campaigns (AoI 5.1.3). Both initiatives will in turn contribute to promote formal distribution channels as a safer option for consumers and a more profitable option for FVC agents, over the informal channels. Initiatives that support information sharing among farmers and vertical and horizontal integration among value chain actors thereby contributing to shorten FVCs, will also be encouraged⁹⁰.

3. Strengthen the linkages among FVC agents

This action will be ensured by leveraging on the promotion of inclusive cooperative/group-based production (AoI 1.1.9), processing and marketing (AoI 2.2.4). Introducing modern post-harvest technologies, especially refrigerated transport vehicles, low temperature storage, modern slaughterhouse, improved packaging, ethylene-induced ripening chamber, will support FVC efficiency gains when associated with strong linkages among the FVC agents⁹¹. Encouraging cooperative/ group-based establishment of these innovative solutions to the FVC will help efficiency gains in the market.

4. Promote innovative solution for reducing food loss and waste

See Strategy 5.2.

5. Promote innovative solution for packaging and storage (see AoI 2.3.1)

Packaging and storage services in FVCs are often poor and inadequate which creates higher costs for agents along the chain. Private sector initiatives such as PRAN providing packaging (plastic crates) and traceability services (providing farmer's name on the label) for their mango products, should be promoted and incentivized⁹². Improving the packaging and transportation services is essential for FVC efficiency gains (NAP PoA 2020 AoI 2.1.5.). Large-scale food processors are in the frontline for innovating smart packaging, ranging from technologies for reduced contamination, to biodegradability and sustainability. These innovations need to be scaled up in line with food safety standards and regulations⁹³ and the Bangladesh Food Safety Authority (BFSA) Packaged Food Labelling Regulations 2017, and leveraged with adequate research to ensure scalability.

Cross references

- NFNSP PoA: AoI 1.1.9; 2.1.1; 2.1.2; 2.1.3; 2.2.3; 2.2.4; 2.3.1; 5.1.1; 5.1.3; Strategy 5.2.
- NAP PoA 2020: AoI 2.1.5 Improvement in Packaging and Transformation

AoI 2.2.2. Encourage and support the establishment and growth of financially viable MSMEs

Rationale

Micro and small enterprises (MSEs) constitute the large majority of non-farm businesses in Bangladesh. The World Bank Enterprise Survey (2013) ranks the top-three obstacles for MSMEs as follows: political instability, electricity (AoI 2.2.3) and access to finance (AoI 1.1.4 and 2.1.2). While the creation of an enabling environment is essential (AoI 2.2.3), this AoI deals with effective ways to respond to the growing request for MSMEs' financial and technical support and to adopt energy-efficient and environmentally sustainable technology in agro-food processing. The CGAP profiling⁹⁴ defined various smallholder farming groups (see AoI 1.1.4). A similar profiling could be useful for MSMEs, from

⁹⁰ Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit*

⁹¹ *Ibid.*

⁹² World Bank. 2019. Financing solutions for micro, small and medium enterprises in Bangladesh

⁹³ BFSA (2019) BFSA Food Contact Materials Regulations 2019

⁹⁴ Anderson J., Moler A. & Kretchun N. (2016) *Op. cit.*

subsistence to more advanced and entrepreneurial firms, to ensure that adequate support is provided based on their status of business model, development, technology, level of capitalisation, sector (transformation, distribution, marketing), current challenges and market volumes. The agro-processing MSMEs profiling could emerge from the Enterprise Survey. Agro-processing is recognised as the main source of greenhouse gas (GHG) emissions due to rice production and animal husbandry. In line with the green growth strategy depicted in the PP2041, facilitating access to energy-efficient technology through a preferential line of credit (see AoI 2.1.2), the provision of technical support on energy efficiency, and the inclusion of energy efficient technology adoption in the eligibility criteria to access financing, are key aspects to support the growth of MSMEs.

Action Agenda

1. Regularly perform Enterprise Surveys (in line with AoI 2.2.3)

The last Enterprise Survey produced by the World Bank Group was in 2013. It may be therefore no longer closely reflect the needs of MSMEs in a rapidly changing context, exacerbated by the COVID-19 pandemic. The World Bank Enterprise Survey is an excellent benchmark which includes 12 topics⁹⁵. The survey will be expanded under the leadership of BBS and the MoInd to include a topic on environment and sustainability and the CGAP Smallholder Household Surveys subgrouping, and profiling by sub-sectors and by sub-region may be used. This improved design will constitute a solid reference to provide data-driven, tailor made solutions for MSMEs in Bangladesh.

2. Design tailored-made financial, technical and managerial support based on the enterprise profiling and surveys

Enterprise Surveys will help provide targeted support to different groups. This will include peer to peer exchange among different profiles of MSMEs aiming to facilitate graduation of firms from a lower to a higher profile. This action will be made easier by leveraging on the promotion of inclusive cooperative/group-based processing and marketing (AoI 2.2.4), and on the establishment of frameworks for national and subnational FNS stakeholder partnerships (AoI 5.5.4). Continued technical support from DPs when necessary and the Green Climate Fund (GCF), will be tapped into.

3. Promote private sector investment in agro-food processing through large scale adoption of energy saving technology and equipment

The current GCF Country Programme for Bangladesh⁹⁶ presents the country's priorities on climate change as set in 2018, under the coordination of the Economic Relations Division (ERD), Ministry of Finance (MoF) which is the National Designated Authority (NDA) to manage the GCF. The GCF country portfolio may be expanded to include agro-processing in line with PP2041. An integral package of concessional financing for agro-processing and technical assistance to make agro-processing resilient to climate change will be designed with adequate technical assistance and submitted to the GCF for funding and will subsequently be implemented under the coordination of MoInd and MoEFCC and the support of the MoFL in close coordination with the NDA. The ultimate objective of the programme will be to promote agro-processing while abating GHG emissions – measured in terms of carbon dioxide equivalent, particularly in the livestock sector, and for women-led entrepreneurships. To reach that objective, it will be essential to update the GHG inventory. Essential elements of the programme design will be capacity building, awareness raising, policy development and support in loan disbursement, as well as monitoring and evaluation of the programme targets.

⁹⁵ Biggest obstacle, corruption, crime, finance, firm characteristics, gender, informality, infrastructure, performance, regulation and taxes, trade, workforce.

⁹⁶ NDA Secretariat. 2018. Journey with Green Climate Fund Bangladesh's Country Programme for Green Climate Fund. Economic Relations Division. Ministry of Finance. Government of the People's Republic of Bangladesh

Cross references

- NFPS PoA AoI 1.1.4.; 2.1.2.; 2.2.3; 2.2.4; 5.5.4.
- PP2041

AoI 2.2.3. Create an enabling environment to attract private investment in infrastructure, processing, value addition, marketing and eliminate business barriers

Rationale

The PP2041 foresees an agricultural transition towards highly productive, modern, diversified and climate-resilient agriculture, driven by a sustained demand for nutritious and safe foods both domestically and internationally. The private sector's role is essential for sustained investment in food processing, transformation and marketing. To ensure the profitability and positive socio-economic impact of private investments, a necessary condition is the creation of an enabling environment whereby the following are provided: a favourable FNS investment, regulatory (AoI 2.1.3), policy and legislative environment, including on food safety (AoI 5.1.1); a set of public goods, such as large infrastructure and networks; reliable access to energy, data and information (Strategy 5.3); technical education and vocational training (AoI 2.4.1). This is closely linked with food trade liberalisation and creating opportunities for agro-food exporting subsectors (AoI 2.1.4). Policies and incentives that support agro-food businesses already exist: for instance, the Agro-Food Processing Promotion Policy 2019 with a 20% cash incentive and tax exemption for selected fresh and processed food exports. However, adequate private investments and certainty in the policy and regulatory environment requires closer dialogue between the private and public actors (AoI 5.5.3). A viable solution shown to be effective by the Ready-Made Garment industry is the establishment of Special Economic Zones (SEZ) which are to be set up for agro processing (AoI 2.3.3). The improvement of food safety regulatory standards is also essential to ensure food safety and compliance importing countries' legislations. As a member of the Nationally Determined Contributions partnership and with one of the fastest growing power sectors in South Asia, Bangladesh is committed to achieving universal access to affordable and clear electricity. However, as of 2018, 22% of the rural population still had no access to electricity. Reliable access to energy represents a major bottleneck with less than 80% power generation capacity operational with frequent scheduled blackouts.

Action Agenda

1. Establish a favourable policy and technical support to incentivise investment in food processing

While Bangladesh policy making is not new to the inclusion of relevant private actors, this will be made more demand-driven and tailor-made to the needs of the private sector. Enterprise surveys will be regularly conducted to ensure that the policy makers' agenda adapts to MSMEs' evolving needs. Moreover the GCF will be tapped in to ensure that an integral package of concessional financing is provided to agro-processing (AoI 2.2.2). Strong PPPs for coordinated investments, technical support and enabling policies will be essential. It is essential for instance to agree on mutual expectations and commitments which need to be translated into action. To make this action achievable, local governance will be strengthened and empowered (AoI 5.5.2) as local authorities are key enablers to ensure the balance between private investment and socio-economic development in rural areas. Transparency and anti-corruption policies and actions will be implemented.

2. Provide synergetic public goods such as infrastructure, data and information

The existence of plans to construct or strengthen infrastructural networks may be a key driver for private investment's decisions. For instance, the FAO Hand-in-hand initiative⁹⁷ (AoI 5.3.1) will be leveraged to ensure synergetic interaction and matchmaking between actors such as the ADB and the Local Government Engineering Department (LGED) to strengthen large scale infrastructures (AoI 2.1.1), international donors to improve socio-economic conditions of marginalized groups in rural areas and private sector investments on a whole specific value chain which present export comparative advantages (AoI 2.1.64). To facilitate economy of scope and scale, SEZ for agro-processing will be established (AoI 2.3.3).

3. Ensure power generation capacity

Power generation represents a main constraint in rural areas and for agro-processing. Electrical outages can reach 80 times per month and last up to five hours for firms. This is particularly harmful for food preservation and for ensuring food quality and cold chain maintenance. The Bangladesh Power Development Board (BPDB) will address the surge in power demand and adjust the energy mix for ensuring long-term energy security by strengthening the preparation of power system master plans. This will be done with particular emphasis on exploiting synergies with the GCF (AoI 2.2.2).

Cross references

- NFNSP PoA AoI 2.1.1; 2.1.3; 2.1.4; 2.2.2; 2.3.3; 2.4.1; 5.1.1; 5.3.1; 5.5.2; 5.5.3.
- NFNSP PoA Strategy 5.3. Improve data, information and analysis for evidence-based planning, monitoring, evaluation, and update of policies and programs through wider partnerships

AoI 2.2.4. Promote inclusive cooperative/group-based processing and marketing

Rationale

While cooperatives⁹⁸ and group-based associations still play a limited role in Bangladesh, their promotion and strengthening can be beneficial for farmers (AoI 1.1.9), the other actors working along the FVC and their communities. Agro-food processing in Bangladesh is largely constituted by MSEs, with two to five employees, and only one in 30% of the cases. The majority of them are informal entities. This translates into limited access to inputs, technology, finance, know-how, information (including on food safety standards and practice) and markets. Against this backdrop, group-based and cooperative input management, technical assistance and commercial logistic management can offer economies of scale in processing and marketing, thereby increasing competitiveness and profitability, especially for MSEs. Institutional support from the Government, adequate financial intermediaries, apex supervision bodies are necessary for cooperative or group-based food processing and marketing to develop and thrive. However, in order to receive a "special treatment", the comparative advantage of the cooperative/group-based systems should be also demonstrated. However, the cooperative/group-based modalities are not yet fully known and understood along with their positive socio-economic long-term impacts for group members and their communities.

⁹⁷ Using the most sophisticated tools available, including advanced geo-spatial modeling and analytics, Hand-in-Hand identifies the biggest opportunities to raise the incomes and reduce the inequities and vulnerabilities of the rural poor, who constitute the vast majority of the world's poor. It uses these tools to understand a comprehensive view of full economic opportunities and to improve targeting and tailoring of policy interventions, innovation, finance and investment, and institutional reform accordingly.

⁹⁸ "Cooperatives are based on values of self-help, self-responsibility, democracy, equality, equity and solidarity. While cooperatives are also businesses, the main objectives for people to set up or join a cooperative is to improve their economic and social conditions through joint action for the good of all members rather than through individual concerns only" (FAO, 1998. Agricultural Development Cooperatives – A Manual for Trainers)

Action Agenda

1. Enhance political commitment and local level institutional support in cooperative/ group-based food processing

While Bangladesh is actively promoting the role of the private sector in FNS, there has not been adequate attention and thinking the potential role of cooperatives. There is a need to update the Cooperative Policy 2012 to provide a clear vision on the value added of cooperative systems for the members and their communities compared to comparable private endeavours. Besides, for the establishment of the cooperatives, it is essential to have institutional support from the local government (AoI 5.5.2), along with implementation of transparency and anti-corruption measures.

2. Assess the comparative advantage of the cooperative system in Bangladesh

From other countries' experiences, cooperatives provide more employment compared to private companies generating the same level of revenue⁹⁹. As the cooperative model remains relatively underdeveloped in Bangladesh and it will be essential to assess and demonstrate its comparative advantage compared to the private sector. Processing and marketing cooperatives may be integrated into the Enterprises Surveys (AoI 2.2.2) to be able to compare their performance (in terms of economic and social benefits) with similar traditional private enterprises.

3. Integrate cooperative-related sensitisation activities in community development projects

The cooperative system has shown to be successful when membership is voluntary and open, the control democratic, the benefits produced for the members and their community and when decision making follows a bottom-up approach. It will be therefore essential to sensitise communities, including women's groups, to the potential value addition of the cooperative system integrating it with other entrepreneurial and community development projects and activities. For instance, the MoFL Sustainable Coastal and Marine Fisheries Project (2018-2023) may be leveraged (AoI 1.1.7), on providing alternative livelihood opportunities to poor fishers.

4. Support financial inclusion of cooperatives/ groups -based processing, marketing and access digital services

Cooperative/ group-based food processing and marketing will receive special attention and dedicated lines of credit and financial managerial support (AoI 2.1.2) as they provide socio-economic benefit to members and their communities. Cooperatives should be therefore provided with low-interest enterprise loan (AoI 1.1.9). Their access to digital services will also be ensured through the implementation of the National ICT Policy 2018¹⁰⁰.

Cross references

- NFNSP PoA AoI 1.1.7; 1.1.9; 2.1.2; 2.2.2.; 5.5.2.
- NAP PoA 2020: AoI 2.3.3 PPP in Processing and Export
- National ICT Policy 2018

AoI 2.2.5. Strengthen ICT-based market information system to provide real time support to farmers

Rationale

Agricultural markets not only perform essential physical marketing functions, such as physical distribution and storage of foods, they also provide “signals” on the cost and price of food products to

⁹⁹ CICOPA. 2017. Cooperatives and employment- Second Global Report 2017

¹⁰⁰ ICT Division (2018). National ICT Policy 2018. Government of Bangladesh

agents operating on the FVC and to final consumers. However, signals and market information are not always available uniformly throughout FVCs. Against this backdrop, ICT offers the opportunity to provide lower prices and higher quality to consumers while offering a fair and stable price to producers. ICT comprehends “any device, tool or application that permits the exchange or collection of data through interaction or transmission. It includes from radio to satellite imagery to mobile phones or electronic money transfers”¹⁰¹. Since the spread of the COVID-19 pandemic, producer organisations started virtual call centres with the support of the Missing Middle Initiative (MMI) of the Global Agriculture Food Security Program (GAFSP). The call centers demonstrated to be useful to connect producers - looking for a way to sell their produce, especially perishables – and consumers via mobile orders and payment thereby minimising physical contact. Different technologies such as mobile phones, messaging, digital money, online meeting platforms need to be integrated with market information systems in support of farmers’ decision making and in timely sales. While DAM of the MoA is in charge of collecting price data, its staff is inadequately equipped to collect price information to capture price volatility at upazila level¹⁰².

Action Agenda

In line with the *Access to information in Bangladesh (a2i) initiative* and with the Bangladesh Strategic Plan of Agriculture and Rural Statistics (SPARS, 2016-2030) Output 4.6 under Goal 4:

1. Strengthen DAM market price data monitoring system through expanded organizational structure up to upazila level

In order to cover real time and upazila level price data, the organizational structure of DAM is to be expanded and staff adequately trained to be able to effectively monitor food market prices up to upazila level. To this end, a detailed assessment and allocation of the necessary human and financial resources will be made.

2. Improve DAM data collection methodology with BBS support

3. Make the price data monitoring system available, reliable and effective

In continuation with the country-level work of FAO with the Food Price Monitoring and Analysis (FPMA) tool, a tool needs to be developed to disseminate the price information collected, in coordination with existing and effective initiatives (e.g., Grameenphone’s GP Krishi Sheba, call centre)¹⁰³ and international development initiatives (e.g., MMI support to virtual call centres) in support of farmers’ decision making and income opportunities. According to CGAP national survey of smallholder households in Bangladesh, 73% of smallholders own a mobile phone, which makes the device useful to obtain real time price information, and improve market transparency, thereby facilitating farmers¹⁰⁴. The main State entities working with agricultural data are BBS, DAE, DAM, FPMU, and Directorate General of Food (DG Food) which have developed increasing linkages and collaborations with both private partners (Grameenphone, I-farmer) and international partners such as the FAO Global Information and Early Warning System (GIEWS), Agricultural Market Information System (AMIS), with Bangladeshi and international universities and other international centres. These collaborations need to continue and to be strengthened.

¹⁰¹ World Bank 2017. ICT in Agriculture: Connecting Smallholders to Knowledge, Networks, and Institutions. Updated Edition. Washington, DC: World Bank.

¹⁰² Bangladesh Strategic Plan of Agriculture and Rural Statistics (SPARS, 2016-2030). June 2017.

¹⁰³ Grameenphone website

¹⁰⁴ CGAP. 2017. Understanding the Demand for Financial, Agricultural, and Digital Solutions from Smallholder Households: Insights from the Household Survey in Bangladesh

Cross references

- SPARS, 2016-2030 Output 4.6. Goal 4 Agriculture Price data system of DAM strengthened

Strategy 2.3 Preserve and enhance nutrient content along the value chain

AoI 2.3.1. Preserve and promote food safety and nutrients along the value chain including during transportation, processing, packaging, storage, wholesale, and retail

Rationale

Food systems are becoming increasingly complex, with foods travelling longer and passing through multiple stages from farm to fork. Longer and more complex value chains and markets mean greater risks of loss in the nutritional value of food and of its safety being jeopardised. The main food safety hazards in Bangladesh include accidental foodborne illness (microbiological, chemical, physical, natural, process induced and environmental contamination) and economically driven (adulteration, mislabelling, etc.) foodborne hazards. But these new types of value chains also mean additional potential entry points to enhance the nutrition sensitivity of value chains through, for example, the use of ICTs to plan food supply wisely and adequately, or the expansion of new types of retailing channels such as supermarkets which are better than wet markets at keeping food safe. Since foodborne illnesses are a significant threat to health, application of safe and hygienic practices in food handling, appropriate technologies in postharvest processing, product development and storage are of utmost importance to preserve the nutritional quality and ensure food safety. Yet, there has been an increased reporting of food safety incidents and hazards by the media, emphasizing the need to sensitise actors of the value chain to the importance of food safety and quality. There is an increased market demand around safe and nutritious food, however it is not enough to pressurise stakeholders in the value chain to practice safe food production/handling/storage processes. There is a need to enable food quality and sanitary safety of food products through adherence to food safety legislations, standards, and norms at every stage of the supply chain.

Action Agenda

1. Collect evidence on gaps and opportunities to preserve food safety and nutrients along the food value chain and implement recommendations

Evidence needs to be collected to understand where on the FVC safety measures need to be enforced to have a safe and sustainable food system, in line with the Food Safety Act 2013. Research can also identify the stages of the value chain where nutrients are being lost due to inadequate practices or infrastructure and/or where they could be enhanced. A value chain approach may be used explicitly as a tool to achieve nutritional goals¹⁰⁵. So far, the focus of different studies has mostly been on the economic benefits of food production, although value chain concepts offer considerable potential for enhancing efforts to improve nutritional quality and safety. Understanding the viewpoint of the different stakeholders to see how their involvement in optimising value chains for nutrition-sensitive product development is required. For example, the underlying objectives and operating principles of the private sector may not obviously match the goal of improving nutrition¹⁰⁶, creating challenges and barriers to designing and implementing NSVC: this needs to be resolved since there is a clear role for the private sector in integrating nutrition considerations into value chains¹⁰⁷. Once evidence is made available on these issues, recommendations should be implemented.

¹⁰⁵ Hawkes, C. & Ruel M.T. 2011. Value Chains for Nutrition. Prepared for the IFPRI 2020 Paper for the international conference "Leveraging Agriculture for Improving Nutrition and Health" February 10-12, New Delhi, India

¹⁰⁶ SUN (2011) Private Sector Engagement Toolkit

¹⁰⁷ Downs, S. & J. Fanzo. 2016. Managing Value Chains for Improved Nutrition in Kraemer K, Cordaro JB, Fanzo J, Gibney M, Kennedy E, Labrique A. & Steffen J. Good Nutrition: Perspectives for the 21st Century

2. Sensitise stakeholders of the value chain to food safety and nutrition (in line with NPAN2 Key Action Area 6.2.5 and 6.5.8)

Food producers and agribusinesses must be sensitised on the importance of preserving the nutritional value of food and when possible, enhancing it, as well to food safety issues. Strengthening value chains for promoting local, micronutrient rich foods, producing foods with fewer chemicals and compliance to nutritional standards for food products are important considerations. Promoting the processing of local fruits such as mangoes and litchis is one such example. Incentives to comply with existing standards must be created and/or flagged to those concerned. For example, compliance to international standards and alignment with global market requirements may open up export markets and in turn increase productivity. The flow of information among participants in the supply chain is also important, as well as product management, in order to maintain the food quality in the supply chain. Sensitization of consumers on these issues (see AoI 3.2.2 and 5.1.3) will translate into greater demand for safe and nutritious foods.

3. Establish and ensure efficient and safe food storage facilities

Food contaminated with pathogenic bacteria may look, smell, and taste normal but if food is not stored properly, the bacteria (pathogens) in it can grow and multiply to dangerous levels. To combat these issues, there is a dire need to establish and ensure sufficient and efficient food storage facilities, including cold storage (see AoI 2.1.1.). Commercial and public storage facilities need to be regularly audited and the facilities need to follow the standards set by BFSA. This includes safe storage of food distributed as part of the Public Food Distribution System (see AoI 4.1.3). Any noncompliance will lead to strict actions against the defaulters. Safe storage with appropriate temperature controls must be ensured at all stages of the value chain: in farms, processors, wholesalers and retailers, and even consumers (see AoI 3.2.1. and 5.1.3).

4. Encourage safe food facilities and outlets selling certified food

In order to build consumer confidence and awareness, the MoFood needs to encourage building more safe food facilities and outlets selling certified food. Shwapno, the supermarket in Dhaka started one such initiative, Shuddho, under which they ensure that only safe food chemicals such as additives, food colours, and preservatives are used in the whole process. They require documentation on the application of permitted chemicals used on the produce, on the agriculture process, from seeding to application of pesticides to harvesting. Such initiatives should be expanded. Food manufacturers and sellers must be responsible and judiciously use chemicals within specified limits and standards, given the related exposure risks.

5. Strengthen food product certification and nutrition labelling for assuring quality and safety

BFSA needs to enhance food safety enforcement through harmonization of its food product certification with Codex standards and in compliance with Bangladesh Standards and Testing Institution (BSTI) guidelines. The technical team should periodically review the certifications of food products and food establishments. Imported foods also need to be certified. Appropriate nutrient labelling and product information must be available on the food product to guide the consumer in food selection. The nutrition information must be consistent with legal requirements, dietary recommendations, and harmonized with guidance from the Codex Guidelines on food labelling. The food producer or manufacturer needs to be provided with a platform where they can consult for their concerns and issues regarding certification and labelling, such as a hotline to collect their grievances and share information.

Cross references

- NFNSP AoI 2.1.1.; 3.2.1.; 3.2.3; 4.1.3.; 5.1.3.
- NPAN PoA 6.2.5 Key Action Areas: Promoting/Enforcing measures to ensure regulations of production/ processing/marketing/ preservation of food items; Increasing knowledge and

improving practices to ensure food safety along the value chain; 6.5.8. Key Action Areas: Strengthening the enforcement of Food Safety Act 2013; Enhancing public awareness on food safety.

AoI 2.3.2. Promote the fortification and nutrition enhancement of relevant foods where desirable and efficient

Rationale

Advances made in biofortification are still limited (see AoI 1.1.1.) and cannot singlehandedly address the existing nutritional gaps that affect the Bangladeshi population. Scaling up fortification of staple foods such as rice with essential micronutrients, although not an alternative to improving nutrition through the consumption of nutritionally adequate diversified diets, is a supportive and efficient intervention that can go a long way towards solving micronutrient deficiency. It has been prioritised in the National Strategy on Prevention and Control of Micronutrient Deficiencies 2015-2024 (NSPCMD) and the NPAN2 (2016-2025) and the CIP2 (2016-2020). The National Edible Oil Fortification Law 2013 has led to 100% of refined edible oil to be fortified with vitamin A¹⁰⁸. While overall coverage across the country has certainly increased, worse off households and rural households are less likely to consume such oil, and when they do, do so in lesser quantities. It is suggested it may be due to lesser availability in poorer areas and higher cost, where there is preference for home or locally produced oil due to cultural influences. However, locally produced mustard oil is now more expensive given the labor intensive technologies. Rice fortification with vitamins A, B1 and B12, zinc, folic acid, and iron, has been well accepted and integrated in government social safety net programmes. But particular attention needs to be given to identifying potential barriers to equitable access for all population groups needing adequately iodine fortified salt. On the whole, outreach, coverage and access to fortified foods by targeted populations remain inadequate and needs to be tackled.

Action Agenda

1. Collect data to inform policy

Understanding the state of current consumption of adequately fortified foods is essential for this AoI to be fruitful. For example, the last national survey on the consumption of adequately iodised salt dates from 2015. Regular assessment of the distribution of key micronutrient deficiencies across regions and population groups is required to inform policy.

2. Monitor existing endeavours and apply existing rules

Because Bangladesh already features a number of food fortification programmes, it is important to take stock of the situation in order to be able to adjust them to the needs (as identified from the activity described above), and expand them accordingly (as described below). Compliance of the private sector to the existing laws and notably on vitamin A fortification will need to be reinforced (see Strategic Area 6 of the NSPCMD). The quality of fortified foods will need to be checked. For this, the capacity of the relevant institutes will need to be strengthened as advocated by the NSPCMD.

3. Adjust, expand and scale up existing programmes

Based on the knowledge acquired through relevant monitoring activities (see above), the outreach, coverage and access to fortified foods by targeted populations will be expanded through adequate programmes (in line with NPAN2 Strategic Action 6.2.8 and Strategic Objective 4 of the National Plan of Action for Adolescent Health Strategy 2017-2030). This will be the case for example of the universal salt iodisation programme and the fortification of edible oil with Vitamin A2. Expansion will also

¹⁰⁸ Raghavan R., Aaron G.J., Nahar B., et al. 2019. Household coverage of vitamin A fortification of edible oil in Bangladesh. *PLoS One*. 2019; 14(4):e0212257.

involve reaching groups with specific needs and/or deficiencies in particular nutrients. For this, the distribution of fortified foods through safety nets (in line with NPAN2 Key Action Area 6.2.7) will be expanded with efforts to introduce additional more fortified foods into the food basket of safety nets than is currently included (see AoI 4.3.3 which aims to develop and implement appropriate nutrition-sensitive social protection programs, including food fortification, targeted at nutritionally vulnerable groups especially mother and children).

4. Devise and deploy new programmes to respond to the needs identified

Strategic Area 2 of the NSPCMD recommends new fortification programmes such as adding vitamin D in edible oil fortification. Experiences from other countries and research will help devise other fortification programmes to complement what is currently taking place. The range of fortified foods available may be expanded, taking into account factors such as acceptability (taste, smell and colour may be affected by fortification) and interactions between micronutrients added and the fact that poorer rural households tend to consume only a limited quantity of subsistence foods, limiting the scope for fortification. There is also scope for developing techniques to improve the bioavailability of nutrients such as the germination and malting of grains and legumes for example, or promoting the use of the beta carotene-rich orange fleshed sweet potato in foods for children and adolescents, as ways to enrich foods. The nutritional value of foods may also be enhanced by food-to-food enrichment as in the case of complementary foods for infants and young children. Dried fish and chicken or beef liver blends or chips¹⁰⁹, incorporating orange fleshed sweet potato with coconut, chickpea flour and local molasses in *halua* for an intermediate shelf-life product, or dried small fish powder¹¹⁰, are some notable examples with evidence from the field¹¹¹. Such technologies and products need to be widely tested and taken to scale through FNS and rural poverty alleviation programmes.

5. Promote the sale and use of fortified foods and advocate for their use

Measures are needed to encourage the retail sector to sell fortified products at affordable prices and to promote their consumption by all segments of the population through marketing campaigns (as promoted by Strategic Area 5 of the NSPCMD and in line with Strategic Objective 4 of the National PoA for Adolescent Health Strategy 2017-2030). Fortified foods will need to be integrated with other health programmes to create greater demand.

6. Prevent loss of nutrients while processing foods

Finally, notwithstanding the possibility of fortifying foods, improving their bioavailability, or enriching them, attention must be taken to prevent the loss of nutrients in the processing of foods. Milling and excessive polishing of grains for example, loses a significant part of their nutrients. Processing of different rice products such as in the preparation of puffed rice and rice flakes from hybrid rice or traditional parboiled rice will help conserve B complex vitamins and provide convenience in the use of the product. Similarly, processing technologies of horticulture, tubers and other crops¹¹² will need to be reviewed to identify where losses are taking place and how they can be reduced (see AoI 2.2.1 and 5.2.2. in this respect).

Cross references

- NFNSP PoA AoI 1.1.1.; 2.2.1.; 4.3.3; 5.2.2.

¹⁰⁹ Wasantwisut E, Chittchang U. & Sinawat S. 2000. Moving a health system from a medical towards a dietary approach in Thailand. *Fd Nutr Bull.* 21(2): 157-160

¹¹⁰ www.worldfishcenter.org. 6 aquatic food system innovations transforming women's livelihoods

¹¹¹ Saha, M, Mannan A, Bhattacharjee L. 2016. Mainstreaming Nutrition into Agricultural Extension: Lessons Learned from Two Projects that Integrated Agricultural Interventions and Nutrition in Bangladesh, Feed the Future, Integrating Gender and Nutrition within Agricultural Extension, INGENAES, and FAO

¹¹² Hassan K et al. 2010. Post Harvest Loss Assessment: A Study to Formulate Policy for Loss Reduction of Fruits and Vegetables and Socioeconomic Uplift of the Stakeholders, BAU/FPMU/FAO

- NSPCMD 2015-2024: Strategic Areas 2: Micronutrient Intervention Programmes; Strategic Area 5: Advocacy and Communication; 6: Monitoring, Evaluation and Research
- NPAN2 Key Action Area 6.2.7. Providing nutritionally enriched supplementary food in response to emergency and severe food insecurity; Strategic Action 6.2.8: Initiate a food fortification programme and expand its use and perimeter.
- Strategic Objective 4 of the National Plan of Action for Adolescent Health Strategy 2017-2030), Key Strategy: Establish programmes that promote dietary diversification, dietary adequacy, fortified foods and nutrition security through community and school-based interventions

AoI 2.3.3. Promote innovation and development of appropriate technologies to preserve nutritional value in local and export processing zones (EPZs), including under Public Private Partnership (PPP)

Rationale

Nutrients in food need to be preserved along the value chain (see AoI 2.3.1) and innovations and the development of the agro-processing industry are key in doing so. The PP2041 mentions various types of Economic Zones (EZs) as a means to incentivise industrialization, employment generation, domestic and foreign investments, in a variety of productive sectors including high value crop processing. This is mainly regulated by the Bangladesh Economic Zones Act (2010)¹¹³ amended in 2015 which established the Bangladesh Economic Zones Authority (BEZA)- and the Bangladesh Private Economic Zones Policy (2015). BEZA's goal is to establish, license, operate, manage and control EZs including in underdeveloped regions, through increased and diversified industry, employment, production and export. The policy framework ensures equal treatment for local and foreign investors and, unlike previous Export Processing Zones, promotes linkages with the local economy, and special arrangements in environment clearance, labour issues, taxation and customs clearance¹¹⁴. The 2017 BEZA investors' guide to EZs¹¹⁵ helps identify, develop and operationalize EZ projects through either PPPs or as private projects. There are currently 66 EZs: 55 government owned - including the agro-processing zone in Natore and 11 private. Agro-processing EZs can stimulate demand for diversified and nutrient-dense raw products and for other productive inputs (machineries and infrastructure) and services (including financial, technical support, training, leasing). These can in turn increase demand for efficient road and rail infrastructure, health facilities, housing, schools and training facilities. To facilitate private sector investment, the government may provide incentives such as easy land leasing system, one-stop service for all utility connections, guarantee for loans and tax concessions. The private sector can build the infrastructure in exchange for land and basic utilities. The establishment, operationalisation and mainstreaming of EZs is strictly interlinked with the setup of a conducive enabling (AoI 2.2.3), and regulatory (AoI 2.1.4) environment, with food trade liberalization (AoI 2.1.6) and increase in efficiency gains in FVCs (AoI 2.2.1). The active participation and capacity strengthening of local authorities are also necessary conditions (AoI 5.5.2).

Action Agenda

1. Strengthen linkages with local economies

The success of EZs depends on their connection with local economies, local employment generation knowledge and technology and know-how transfer, and human capital creation. It is essential for project

¹¹³ The exhaustive legal framework can be found at <https://www.beza.gov.bd/investing-in-zones/legal-frameworks/>

¹¹⁴ BEZA. 2016. Bangladesh Economic Zones Development Guide

https://openjicareport.jica.go.jp/pdf/12288353_01.pdf

¹¹⁵ BEZA. 2017. Investors' Guide – A Guide to invest in Economic Zones <https://www.beza.gov.bd/wp-content/uploads/2017/05/Investors-Guide.pdf>

proponents, both private and public, to timely consult local stakeholders and to take into consideration environmental and socio-economic factors from the appraisal phase of the business plans, in order to obtain local consensus, and to prevent adverse reactions from the local communities. For instance, public consultations should be publicized well in advance to ensure broad public participation and socio-economic considerations should be included in the proposal assessment.

2. Identify areas, roles and gaps to develop agricultural produce EZs

BEZA, in coordination with the MoInd, the MoA and local government authorities, will identify areas where agro-processing zones could have the highest impact in terms of job creation and human capital development. Regions where specific horticulture produce crops can be processed for commercial viability, given the soil conditions, topography, climate and nutrient content, should be mapped. An analysis of territorial competitiveness of the selected areas will be produced, in line with local stakeholders' buy-in and interests and private investors' requests. The territorial competitiveness studies will aim at providing an analysis at local level (district/upazila level) by market-specific (agricultural specialisation, availability of workforce and productive inputs) and development-specific indicators (contribution to broader Bangladesh economic development) and by identifying infrastructural and resource endowment (power generation capacity, logistics corridors -air, road, sea, rail- health facilities, education facilities, availability of social housing and other amenities) which would contribute to preserve nutritional value in the produce. This will allow to assess gaps and investment needs and identify solutions through either PPP or private investments.

3. Promote learning from international experience, practice and standards

BEZA and the MoC in collaboration with regional organizations, ADB, FAO, OECD, the World Bank and other DPs will reach out to relevant institutions in other countries to share relevant successful experience in the development of EZs focused on agro-processing. For instance, Environmental Impact Assessment of projects will draw from international standard practice. The case of cooperation between investment promotion and anti-corruption monitoring institutions set up in Thailand and Cambodia is another example of good practice which Bangladesh may learn from.

Cross references

- NFPSP PoA AoI 2.1.4; 2.1.6; 2.2.1; 2.2.3; 2.3.1.; 5.5.2
- PP2041
- BEZA Investors' Guide (2017)

AoI 2.3.4. Build the capacity of the private sector to test food and communicate results to and engage with value chain actors for adequate remedial actions, and establish food traceability mechanisms

Rationale

Given the extensive role of private sector in the FVC, its capacity to maintain food safety standards is a major challenge. While the government is responsible for creating a legal and regulatory environment towards food safety and ensuring compliance (see AoI 5.1.1), the capacity of the private sector to comply with these rules needs to be reinforced through improved understanding of the issue and better practices. Trainings on GAP, GHP and GMP are essential to this effect, but they remain infrequent compared to the needs across the country. Although there has been some progress in BSTI awarding food system management certificates to producers and manufacturers in recent years -reflecting compliance with food safety standards set by the authority in their management and quality- the number remains low. Initiatives have been taken by several UN and Global Trade Promotion bodies to strengthen the capacity of Bangladesh Accreditation Board (BAB) to provide accreditation to certification and inspection agencies based on international standards (ISO 17020 and ISO 17021).

Businesses also need to be able to demonstrate their compliance to consumers so as to maintain their confidence and reduce possible liability, especially in a context of heightened publicity of the problems of food safety and food adulteration related issues. The BFSA drive to introduce an international gradation system for restaurants can help to this effect but needs to be accelerated and expanded nationally. More consumer awareness (AoI 5.1.3) will create more demand for safe foods, giving the private sector an incentive to comply with the required standards. Businesses also need to be able to implement effective food traceability (AoI 5.1.2) and recall systems, both of which are still limited. Concurrently, private testing laboratories are needed across the country to respond to the growing local needs (see AoI 5.1.1).

Action Agenda

1. Accelerate GAP, GAqP, GHP, GMP training and knowledge transfer (see AoI 5.1.2., Action 6)

Customized training on GAP, Good Aquaculture Practices (GAqP), GHP, GMP, and other good practices will be provided to the relevant FVC actors on a regular basis and across the country, including marginal and small producers. The SME Foundation, the Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN), PKSF, public universities, and extension services of the government body will contribute to devising and implementing these trainings.

2. Prepare strategy, guidelines, and Standard Operating Procedures for the private sector

See AoI (5.1.2., Action 2)

3. Build capacities of private sector to test, trace, recall foods and communicate with the public

Capacities of all private sector FVC actors - producers, distributors, marketers, and retailers, will be strengthened - so that they understand the importance of and are able to engage in activities relating to testing food safety and recall management. AoI 5.1.2 details the actions needed to establish traceability mechanisms. They should also be trained to communicate with the public both to advertise their adherence to food safety standards, in cases of breakdowns in food safety, to foster greater transparency and trust by consumers.

4. Promote the establishment of food testing laboratories

In addition to the BFSA designated food testing laboratories, the establishment of accredited private laboratories will be promoted to test food in all districts. These will be decided by taking into account the location of agro-processing hotspots, risk assessments and a cost benefit analysis. PPP modalities may be used to meet the needs of the country and set up a network of laboratories.

5. Promote private sector based accredited independent certification and inspection agencies for both large and MSMEs and issue trade licenses

Private sector based independent certification and inspection agencies are key in ensuring food safety. In Bangladesh, mechanisms are mostly in place for large-scale food processing industries to obtain their GMP, GHP, HACCP, and ISO 22000 certifications, but this is not the case for MSMEs. Strengthening the Bangladesh Agriculture Certification Board and BAB could play a key role in this regard (see AoI 5.1.1. for more on this). Efforts will be made to facilitate the issuance of trade licenses to SMEs that maintain food quality and food safety standards.

6. Strengthen consumer forums and build consumer awareness

Educating consumers and raising their awareness on food safety (as advocated in AoI 5.1.3) will create a demand for safe food which will incentivise the private sector to pay attention to, and to improve their communication on this issue to the public.

Cross references

- NFNSP PoA AoI 5.1.1.; 5.1.2.; 5.1.3.

Strategy 2.4 Raise incomes of the poor and food insecure

AoI 2.4.1. Expand and promote agriculture-driven, off-farm employment and other employment along the food value chain by expanding vocational training opportunities for rural youth, women and disabled people

Rationale

Rural youth, women, and disabled persons, lack earning opportunities in agriculture, with negative repercussions on their FNS. Indeed, they have less access to land, and hence benefit less from efforts to create jobs on-farm. Lack of adequate skills, information asymmetry, low market integration, and inadequate extension services are other factors that prevent these disadvantaged groups from successfully engaging in on-farm income generating activities. Moreover, in the medium to long run, increasing mechanisation and growing land scarcity will also mean fewer opportunities for on-farm job creation. Expansion and promotion of agriculture-driven off-farm employment opportunities along the FVC can facilitate income generation for these three groups. Off-farm employment includes extension services, processing, packaging, storage, transportation distribution, and retail. Adapted vocational training arrangements for skill generation, market integration and extension services may help make them economically solvent, as well as training and capacity development along with financial services and development of market linkages (see AoI 2.4.2 and AoI 2.2.2). Currently however, the Technical and Vocational Education and Training (TVET) sector faces multi-faceted challenges such as the absence of comprehensive training needs assessments, lack of responsiveness to market demands, small size of the industrial base, low female participation, inconsistent certification according to the National Skill Development Policy 2011, and poor monitoring and governance. There are also shortcomings in service delivery and in the utilization of these services provided by public institutions. If the skills gap that exists is to be filled in order to create employment along the FVC, regulation mechanisms need to be strengthened and the quality of the skill training system ensured through accreditation of courses, TVET certification, and registration of training providers.

Action Agenda

1. Increase market demand-based vocational training on the food value chain for rural youth, women, and disabled persons

The need for training of rural youth, women, and disabled persons, to develop adequate skills to run an enterprise is recognised as an issue to be dealt with in the 8FYP and can be addressed through location specific community-based TVET training focusing on the agri-food sector including on activities related to food processing, packaging, storage, transportation, and retail sale. Promoting safe marketing of food and commodities (see Strategy 11.4 of the 2017 Bangladesh National Youth Policy (BNYP), especially food production safe from chemical and environmental hazards (BNYP Strategy 11.4.1), and incentivizing rural youth (BNYP Strategy 11.4.2) to become self-employed in safe food marketing, would be also an effective strategy. A market demand based well-designed course focusing on the rural community setting and particular agro-ecological zones may help rural enterprise growth in line with the draft National Skill Development Policy 2020. Existing TVET services need to be modernized to provide rural-based training in high demand areas in order to enhance participation from women, youth and the disabled (AoI 2.4.2).

2. Capacity building training for women enterprises

MSMEs face a substantial challenge in their productivity in terms of value added per worker and low average wage¹¹⁶. The National Strategy for Promotion of Gender Equality in TVET aimed to increase female participation from 13% to 40% by 2020. To increase the productivity level of these already existing enterprises and to integrate left out women, capacities need to be built and credit facilities, extension services and ICT services (see AoI 1.1.4) provided, along with market integration. Women market corner at each village marketplace as well as in growth centres can help develop agro-food sector value chains¹¹⁷; however, without skilled women entrepreneurs, this may not be sustainable. Training can be arranged from both public and private agencies, in order to support market linkages (both horizontal and vertical integration). ICT-based women enterprise platforms may help in this regard, providing both physical and online training facilities. Financial inclusion through the availability of digital mobile phones with low-cost internet connections and mobile financial services for rural women can increase productivity, through participation in capacity development training .

3. Promote training on Agri Service Centres for repair and servicing of agriculture machineries

Most rural areas suffer from inadequate service centres for agricultural machineries as well as lack of skilled mechanics. TVET training on agricultural machineries' repairing and servicing could provide an income generating activity to rural youth, women, and the disabled community. In addition, establishing agri-service centres in rural areas through private-public initiatives could help mobilize this under-used rural manpower. Piloting some model service centres by DAE with public funding, and running it by TVET-trained rural youth could play a vital role in this regard.

4. Capacity development training for promoting Custom Hiring Centres for agriculture implements

Custom Hiring Centres are a platform where farmers, entrepreneurs, and society interact, and where farm machineries, implements and equipment can be hired. These centres provide easy access to costly farm machinery, and to efficient and timely use of inputs by small and marginal farmers, and enables them to adopt climate resilient practices and technologies, reduce labour use, increase cropping intensity, recycle crop residue, and overall, reduce the cost of farming. However, Custom Hiring Centres require skilled workers and managers. Both TVET and private sector training facilities can help engage rural youth, women, and disabled persons in this process. Enabling private sector investment in agriculture machinery and their hiring service provision through digital technology would be key, in addition to the capacity development of these three groups.

5. Strengthen coordination among government agencies

Harmonized coordination among the apex government agencies for skill development in the FVC is essential since training service delivery and its utilization in the FVC falls under more than one government agency. For example, the Directorate of Technical Education (DTE) under the Ministry of Education (MoE), Department of Women Affairs under the Ministry of Women and Children Affairs (MoWCA) and Department of Youth Development (DYD) under the Ministry of Youth and Sports (MoYS) are key for off-farm employment generation. In this regard, Bangladesh Technical Education Board (BTEB) should strengthen its regulation mechanism and ensure the quality of the skill training system through accreditation of courses, TVET certification and registration of training providers.

Cross references

- NFPSP PoA AoI 1.1.4. Improve timely access to credit, including micro-credit, to small-scale producers through suitable institutional reforms, 2.2.2. Encourage and support the

¹¹⁶ World Bank.2019. Financing Solutions for Micro, Small and Medium Enterprises in Bangladesh. World Bank and PRI.

¹¹⁷ Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit.*

establishment and growth of self-supporting financially viable MSMEs, 2.4.2. Provide adequate credit, technology, information, and other related services for the growth of agro-based industries and the broader rural non-farm economy, with special emphasis on the most vulnerable sections of the population

- BNYP 2017
- National Skill Development Policy 2011

AoI 2.4.2. Provide adequate credit, technology, information and other related services for the growth of agro-based industries and the broader rural non-farm economy, with special emphasis for the most vulnerable sections of the population

Rationale

Poor and vulnerable people are constrained from getting access to safe and nutritious foods, due to lack of purchasing power. Increased incomes and greater access to local markets for fruits, vegetables and animal produce, as part of agro-enterprise promotion could positively impact on dietary diversification. Promoting both agro-industries and non-farm enterprises, with an inclusive approach targeting vulnerable groups like poor unemployed youth, persons with disabilities (PwD) and women can enhance both income and food security. Greater opportunities will be created to earn enhanced income by supporting agro-based industries including service industries - storage, value addition, packaging and marketing of food and beverages, fibres and textiles, abattoirs, leather industries, farm implements, bio-pesticides and bio-fertilisers and animal feed, and non-farm cottage, micro and small (CMS) enterprises - artisanal and handicrafts, tailoring, construction, petty shop, trading, tourism, and healthcare (AoI 2.2.2, 2.4.1, 4.3.4). Necessary access to finance, technology, information and technical know-how will be facilitated towards this (AoI 1.1.4). The Microcredit Regulatory Authority has set a ceiling of 27% annual rate of interest on microcredit¹¹⁸. The poor will benefit from access to small amounts of credit at lower rates of interest (AoI 2.2.4). With regards to technology, nearly half of rural households have no access to computers in their village and 59% do not have access to a smartphone¹¹⁹. Following the International Labour Organization's guidelines for an inclusive workforce, the DTE has allocations to provide PwD with training and financial support to start enterprise activities. These initiatives will contribute to generation of wage employment also and further boost the economy.

Action Agenda

1. Increase access of formal sector finance with special emphasis for the most vulnerable sections of the population

Efforts will be made to increase access to individual and group based agro-based (both crop and animal husbandry) and non-farm CMS enterprise activities as proposed under AoIs 1.1.4 and 2.1.2 but emphasising the participation of the most vulnerable and usually excluded sections of the population. In particular, collateral-free access to microcredit will be facilitated as well as a lowering of interest rates. The Bangladesh Bank has introduced measures to increase access to formal sector credit. Banks and Non-bank Finance Institutions (NBFIs) can get refinance for promotion of agro-based product processing industry; and new entrepreneurs in CMS industry sector. CMS enterprises that use by-products such as straw/husk, hay, jute leaf, jute stick etc., will also be promoted and market linkages facilitated, in line with the National Agriculture Policy (NAP) (2018). Efforts will be made to increase access to microcredit for small borrowers, to undertake enterprise activities, in line with the PP2041

¹¹⁸ Institute of Microfinance. 2016. Interest Rates in Bangladesh Microcredit Market. Policy Brief

¹¹⁹ Bin Shadat, Md.W, Md.S. Islam, I. Zahan & M. Matin. 2020. Digital Literacy of Rural Households in Bangladesh. BRAC Institute of Governance and Development (BIGD) BRAC University

that aims at creating employment for 1000 male and female youth every year from each upazila. Separate allocation will be made to target PwD and make them more self-reliant.

2. Improve productivity of the use of credit

Productivity of the use of credit will be improved through need-based training for acquiring skills in enterprise activities, and technology transfer to the borrowers. The 8FYP emphasizes the need for skill training and need-based TVET programmes. Access to training in marginalized areas and for vulnerable groups will be improved by rolling out community-based training targeting key rural industries such as agriculture, livestock, fisheries and handicrafts, as well as providing skills relevant to rural infrastructure and the development of a range of community services and specially designed courses developed for increased employment opportunities for under-privileged groups, in line with the draft National Skill Development Policy 2020. Existing TVET Institutes will be developed and modernized to offer training in available rural technologies to meet the challenge of the fast-changing economy in rural settings and attention given to establishing rural-based training institutes in high demand areas and the participation of women and PwD facilitated, with the PP 2041 in focus.

3. Extend support to organisations that promote women entrepreneurs

Support to organisations that promote women entrepreneurs in informal and formal economy will be extended, giving access to finance schemes such as micro-credit. To encourage female entrepreneurs to take CMS and medium enterprise initiatives, refinance facility is being provided by Bangladesh Bank to banks and NBFIs at lower rate of interest. Banks and NBFIs can avail Refinance Facility at 3% interest rate as against 5% earlier against their disbursed CMS and medium enterprise loan, so that the customer can avail the same at 7% interest rate instead of 9% earlier. For greater inclusion of marginal and home-based women entrepreneurs, the loan limit has been set up to BDT 10,000 and group-based lending of up to BDT 50,000 is permitted¹²⁰. All effort will be made to address gender imbalance in skill training and for targeting women in particular, as stated in the draft National Skill Development Policy 2020.

4. Expand access to ICT, and cell phone connectivity in rural areas and reduce digital divide

In order to improve access to market information so that poor and vulnerable sections of the population can expand access to markets and derive financial benefits, access to ICT, and cell phone connectivity in rural areas will be expanded. Steps will be taken to bridge this gap and to ensure adequate information access to vulnerable populations for availing opportunities to enhance their income earning opportunities. The 8FYP is committed to making digital and mobile financial services more effective in financial inclusion of poor and marginalized groups, supporting small business holders and addressing gender disparity.

Cross references

- NFNSP PoA AoI 1.1.4.; 2.1.2.; 2.2.2; 2.2.4.; 2.4.1; 4.3.4.
- 8FYP 2020-2025
- NAP 2018
- PP 2041
- Draft National Skill Development Policy 2020

¹²⁰ Bangladesh Bank. 2020. Annual Report 2019-20

4. Areas of intervention to achieve Objective 3 of the PoA

Objective 3: To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements

Strategy 3.1. Develop a long-term national plan for ensuring safe, nutritious and sustainable diets in alignment with recommended nutrient intakes at every stage of the life cycle

AoI 3.1.1 Develop a national-level food production, supply and consumption plan based on a nutrient gap analysis considering energy and nutrient demand for a healthy and active life

Rationale

In order to achieve optimum health and nutritional well-being, it is essential to ensure the availability, continuous supply, access and consumption of diversified nutrient-rich, safe foods at affordable cost to meet the nutrient demands of the population, by age, sex, physical activity and physiological status. A gap remains between desirable and actual dietary patterns. An average gap of 83 kcal remains between energy requirements of 2400 kcal versus 2318 kcal.¹²¹ Even though the per capita intake of rice decreased from 416g in 2010 to 367g in 2016, this is still higher than the desirable norm of 350g. Conversely, the per capita vegetable intake of 167g in 2016 is much lower than the desirable intake of 300g. Among animal source foods (ASF), only fish consumption meets the desirable intake. As national household averages, these estimates do not indicate individual dietary diversity and nutrient adequacy. An assessment of the gap in availability and actual dietary intake is needed at the individual level to plan food production and supply. Per capita energy and nutrient requirements for different groups across the life cycle are also needed for food planning. Long-term food planning for ensuring healthy and nutritious diet is an immediate need for Bangladesh considering its growing population, income growth, socioeconomic status, and high burden of child malnutrition. Additionally, rapid urbanization and the changing food systems are transforming traditional food patterns to modern ones with an increased consumption of processed or fast foods, especially in urban areas. The consumption of highly processed sugar-rich, high fat and salty products and ultra-processed foods e.g., sugar-sweetened drinks increase the risk of overweight, obesity and NCDs.

Action Agenda

1. Establish and achieve nutrient targets (in line with Pillar III of the CIP2)

There is need to establish and achieve the proposed normative nutrient targets for long-term national and sector-specific diversified food planning. This needs to consider the energy and nutrient requirements, desirable dietary pattern (DDP), and per capita consumption at individual levels. To this end, it is essential to adapt the methodology for determining recommended dietary intake and compute macro- and micronutrients requirements for different population groups with varying age, body size, occupation, and physiological states. Recent evidence from the Indian Recommended Dietary Allowances 2020¹²² suggests adjustments in the energy and nutrient requirements that may be considered as a frame of reference, given the developmental transition and increase in the double burden of malnutrition across South Asia. The DDP needs to be adopted for promoting the intake of different foods according to age, sex physiological and physical activity needs for individuals across populations from different regions in Bangladesh. Moreover, normative standards and methodologies will be adapted for establishing long-term targets for physical growth using dynamic tools/mechanisms to ascertain per capita consumption of cereals and other foods for diversified food planning. This requires

¹²¹ Ministry of Health and Family Welfare, 2017. Second National Plan of Action for Nutrition (2016-2025). Government of Bangladesh

¹²² ICMR-NIN, 2020. Nutrient requirements for Indians. ICMR-National Institute of Nutrition, Hyderabad, India

an understanding of the food supply situation and projections that can help set realistic consumption targets, enhance diversified food supply and stimulate diversified food demand.

2. Carry out nutrient gap analysis

Food consumption measurement and nutrient gap analysis need to be carried out in a timely and periodic manner, ideally every three years. Although the International Food Policy Research Institute's (IFPRI) Bangladesh Integrated Household Survey (BIHS) collected individual food consumption data, it covers only rural areas. There is need for a national food consumption survey to provide estimates for measurable dietary indicators which assess the current food consumption, dietary and nutrient intake and the food security situation to inform and refine future nutrition programming interventions. There is also a need to include in-depth analyses of consumer perception and behaviour on the attributes of foods, food choices and the drivers for healthy food consumption. Secondary data from national sources (such as the Household Income and Expenditure Survey (HIES), BIHS, the Bangladesh Demographic and Health Survey (BDHS) and the Multiple Indicator Cluster Survey (MICS)) will also be used and applied to identify the enabling factors and barriers to nutrient intake, in particular the availability, cost and affordability of nutritious diets, and their linkages with nutritional status. It will engage multiple stakeholders from public and private sectors to prioritize context-specific strategies to meet the energy and nutrient targets for everyone in the population.

3. Periodically update national dietary guidelines and implement them (as per NPAN2 Key Action Area 6.2.9)

The updated national dietary guidelines 2020 outlines the desirable dietary intake for the Bangladeshi population based on an aggregated food supply - nutrient gap calculation and nutrient targets established to inform diversified agricultural production and enhance the consumption of diversified (healthy) foods. Based on the WHO/FAO 2004¹²³ proposed energy requirements, normative nutrient guidance has been outlined, translating these into food requirements. From the WHO/FAO 2004 energy requirements, an average requirement of 2430 kcal/day¹²⁴ has been computed for a Bangladeshi adult, across the general population. The national dietary guidelines are a consolidated set of general, age and disease-specific guidelines to serve as a tool in agriculture, food, and nutrition planning. With the periodic update of the dietary guidelines, there is need for implementing these as a tool to inform FNS policy and planning for healthy food supply, inform the establishing of healthy food standards along with national FCTs, and promote nationwide dissemination as a nutrition education tool to enhance the demand for the consumption of healthy diets (in line with AoI 3.2.1).

4. Update FCTs and propose a food list for healthy diets

FCTs¹²⁵ are essential for food and agriculture planning, setting nutrient targets for policy and planning, formulation of institutional and therapeutic diet, food-based nutrition training, nutrition labelling, food regulation and consumer protection. In Bangladesh, the current FCT was published in 2013. It is important to update FCTs and include more foods with nutrient composition information notably with reference to energy, nutrients (e.g., protein, fat, carbohydrate, vitamins and minerals), and other nutritionally important food constituents (e.g., fibre, anti-nutrients, phytonutrients, etc.). It will also help to develop a key food list that prioritises locally available low-cost nutritious foods, especially considering the food patterns of the ethnic groups and remoteness of some areas like *char*, *haor* and hilly regions. This food list will also consider traditionally underutilized foods that are nutrient-dense (see AoI 1.2.1 and 3.2.1). The list is essential to encourage consumption of a diverse range of nutrient-dense, locally grown foods including animal source foods, fruits, vegetables, and whole grains. Moreover, FCTs and the key food lists need to be disseminated and regularly updated. These should also include foods with high nutrient densities that can be used in comprehensive food planning, to

¹²³ UN University, WHO and FAO. 2004. Human energy requirements. Report of a Joint FAO/WHO/UNU Expert Consultation.

¹²⁴ Ministry of Food, Ministry of Health and Family Welfare & FAO. 2015. Dietary guidelines for Bangladesh. Government of Bangladesh

¹²⁵ INFS-DU & FAO. 2013. Food Composition Table for Bangladesh

guide the demand and supply of a wide range of foods and help meet the dietary nutrient targets by encouraging the production of nutrient-dense crops, horticulture, and ASF, through homestead garden, poultry, and livestock. Affordability of foods would need to be a key consideration in this regard.

Cross references

- NFNSP PoA AoI 1.2.1.; 3.2.1
- CIP2 Outcome III. Improved dietary diversity, consumption and utilisation
- NPAN2 Key Action Area 6.2.9. Promoting of FBDG for healthy diet

AoI 3.1.2. Support the implementation of desirable dietary pattern (DDP) plans for a healthy and sustainable food system

Rationale

Latest available estimates indicate that the prevalence of acute malnutrition (wasting) is 9.8% among under-five children. Similarly, only one in three children aged 6-23 months has a Minimum Acceptable Diet (MAD)¹²⁶. National estimates reveal that more than half of the women of reproductive age consumed five out of 10 food groups, indicative of Minimum Dietary Diversity (MDD)¹²⁷. During the COVID-19 pandemic, only 27% of male and 37% of female adolescents and youth (10-24 years) had adequate MDD¹²⁸, indicative of micronutrient inadequacy in the diets given the lack of access to fresh fruits and vegetables, dairy and poultry from the food system. DDP provides normative guidance for planning healthy diets using dietary and nutritional principles. It guides uptake and implementation of DDP based nutrition targets into the sectoral plans of agriculture, livestock and fisheries, to produce and enable consumption of nutrient-dense and healthy foods. Given the emerging impacts of climate change on nutrition coupled with the multiple burden of malnutrition, there will be a need to advise policy shifts to increase consumption of plant-based foods (fruits, vegetables, nuts, legumes) and reduce consumption of red meat and sugar for both health and environmental benefits. Therefore, integrated nutrition guidance tools, which provide guidance beyond DDP and consider cross cutting issues that impact food systems and diets will be needed. A balance of plant and animal-based foods within the framework of the DDP is imminently required. Accordingly, evaluation of diets and food systems practices for nutrition outcomes can together contribute towards achievement of the SDGs and the Paris Agreement, to which Bangladesh is a signatory^{129,130}.

Action Agenda

1. Focus on smallholder farmers as important change agents for improved food systems and nutrition

Smallholders in agriculture, fisheries and livestock need support from the GoB's programme of assistance through growth centres to continue their farm profitably and responsibly through local production of diversified nutrient-dense foods (in line with NAP PoA 2020 Key AoI 1.6.1). Upazila "Growth Centres" will facilitate access to credit, quality inputs, sale of agricultural produce, temporary storage and marketing. In line with the 8FYP, immediate actions will be taken to enhance access to finance for small poultry and livestock farmers to meet the huge target of animal source foods to meet the needs for good quality protein and bioavailable micronutrients in the diet 2025. Access to bank financing at affordable rates of interest and insurance schemes for small growers and entrepreneurs will

¹²⁶ National Institute of Population Research and Training (NIPORT) & ICF. 2020. Bangladesh Demographic and Health Survey 2017-18. Dhaka, Bangladesh, and Rockville, Maryland, USA: NIPORT and ICF

¹²⁷ Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit.*

¹²⁸ MUCH FAO. 2020. A rapid survey of youth on COVID-19 related nutrition awareness, behaviour and food security in Bangladesh.

¹²⁹ The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC) dealing with greenhouse gas emissions mitigation, adaptation and finance starting in the year 2020

¹³⁰ EAT Lancet Commission. 2019. Healthy Diets from Sustainable Food Systems, Food Planet, Health.

be facilitated (see AoI 1.1.4 and 2.1.2, NAP PoA Key AoI 1.6.1). Equipped with appropriate equipment, technologies and training through the DAE and DAM (see AoI 1.1.2, 2.3.1 and 3.2.1) for enhanced production, storage, semi-commercial or household processing, packaging, nutrient labelling, marketing, preservation and safe food preparation, smallholder farmers can contribute to ensuring yearlong access and consumption of nutrient-dense, safe foods (in line with NPAN2 6.2.5).

2. Promote the productive role of women in the food system value chain and provide required support

Nutrition-sensitive agriculture, horticulture, and livestock interventions for women with small landholdings (in line with NAP PoA 2020 Key AoI 2.4.4) will help enable availability and access to diversified food and provide a sectoral entry point for nutrition education and related health-hygiene-sanitation services. Women farmers are challenged by the trade-offs in the allocation of their time to the dual productive and reproductive roles. Localized food system interventions can address this gap, help recognize the value of women's household activities and contribute to their empowerment while enabling them to achieve their optimum potential (see AoI 5.4.2). In line with 8FYP, women empowerment activities will focus on training, post-training support, linking them to markets, promote leadership and income-generation. Trainings on entrepreneurship skills for small scale food manufacturing and local cooperatives for group marketing/ self-help groups for women entrepreneurs will be organized. Mainstreaming nutrition training and behaviour change communication - BCC (see AoI 3.2.1) across local food systems and targeting women from and small and marginal farmers' households will help to enhance their nutrition and food safety knowledge and awareness so as to influence healthy food preparation, correct food choices and diversified food consumption at the household level (in line with NNP Key Action Area 6.2.5). Furthermore, linking community clinic-based BCC activities with the food systems services and social protection programmes will be facilitated to cover a wider outreach of the community, especially women who are not often reached by the National Nutrition Services (NNS).

3. Incorporate integrated nutrition guidance tools to inform food system for healthy and sustainable diets

As indicated in the rationale, integrated nutrition guidance tools encompassing nutrition principles with gender, local farming systems and climate change issues can help inform food system changes to make healthy diets available, accessible, affordable, and sustainable. These changes can be guided by the following actions: (1) to develop and disseminate nutrition guidance tools to sensitize and inform food systems for transformation to supply healthy diets taking into account economic, ecological and environmental circumstances (in line with AoIs 3.1.1 and 3.2.1); (2) promote nutrition behaviour change through nutrition guidance tools including dietary guidelines for consumer awareness and to stimulate demand for healthy diets (in line NPAN2 6.2.9 and as proposed under AoI 3.2.1.); (3) ensure affordable and healthy diets for the most vulnerable populations (see AoI 4.3.2). Emphasis on enhancing the production and consumption of fruits and vegetables, whole grains local millets, plant protein sources (nuts, oilseeds, beans, lentils) and moderate amounts of animal source of protein (local fish, poultry and dairy) for a healthy and sustainable diet will be the key.

4. Enhance private sector engagement for market-based approach for safe and healthy diets at affordable cost

Private sector including local, small and medium-size enterprises and multi-national companies, are required to be engaged to bring innovative approaches and technologies for safe and healthy diets. Market-based approaches are essential to support the private sectors to develop sustained and effective access to nutritious and healthy products and services at an affordable cost for entire populations. To this end, the SUN Business network can play an important role to enhance private sector engagement and strengthening their capacity to improve the enabling environment for influencing the food system for a healthier diet. Consumer education and promotion of healthy and diversified food groups, nutrient labelling, dietary guidelines, and food safety practices (as proposed in 3.2.1) will help the consumers to

make informed choices of foods and food products that confer nutrition, hygiene, and health benefits. The Consumers' Association of Bangladesh (CAB) will need to organize nutrition and food safety advocacy activities on a nationwide basis to create awareness among consumers.

Cross references

- NFNSP PoA AoI 1.1.2.; 1.1.4.; 2.1.2.; 2.3.1.; 3.1.1; 3.2.1; 4.3.2.; 5.4.2.
- NAP PoA 2020 Key Areas of Interventions 1.1.1 Productivity convergence for meeting current and future demand of nutritious food; 1.6.1 Establishing Growth Center in each upazilas (492) for facilitating access to credit, quality inputs, sale of agri. produce, temporary storage and marketing, AoI 2.4.4 Multi-dimensional Role of Women in Agriculture and Gender Equity
- NPAN2 NNP Strategy 6.2.5: Major activities: Promote food preservation and effective storage through trainings; Key Action area 6.2.9. Promoting of FBDG for healthy diet
- 8FYP 2020-2025

AoI 3.1.3. Expand human resources and strengthen institutional arrangements to improve performance of nutrition services with special emphasis on field level

Rationale

A human resource needs assessment by the Bangladesh National Nutrition Council (BNNC) revealed a shortage of skilled resources at national and sub national levels to implement the NPAN2. Out of 22 ministries involved in implementing this PoA, more than 17 also contribute to the implementation of the CIP2(2016-2020)and to the NFNSP 2020. In this regard, a demand needs to be created for accessing multisectoral nutrition services at the field level and for the communities to undertake nutrition-relevant actions to improve their diets and nutrition. The interface between national and subnational (district and upazila) institutional arrangements needs to be strengthened to facilitate and mobilize field level implementers. A need has been notified to fill the nutrition-relevant vacancies at national and sub national levels. With a dominance of upazila Medical Officers and civil surgeons in the supervision and implementation of nutrition services at the field level, there is focus on the curative aspects of service delivery¹³¹. The Medical Officers with clinical expertise are also responsible for nutrition services that encompass activities related to food and agriculture beyond the domains of the health sector. To this end, BNNC has developed minimum nutrition packages to be delivered through the Upazila and District Nutrition Coordination Committees (UNCC and DNCC) at the subnational levels through multi-sectoral expertise. To meet this need, the institutional arrangements and capacity to improve performance and delivery of multisectoral nutrition services across MoHFW, MoA, MoFL, MoWCA, MoE need strengthening and expansion.

Action Agenda

1. Recruit staff to work on nutrition-related matters (in line with NPAN2 Key Action Area 6.3.15 and 6.3.20)

Action will be taken to fill up all the vacant positions of MoHFW for health /nutrition service delivery personnel. Besides, based on the needs' assessment, allocation and recruitment of nutrition workforce need to be accelerated. The post of district nutritionist in facilities/hospitals needs to be sanctioned to recruit nutritionists with integrated expertise of public health nutrition, food security and food safety for enhanced technical support across all core ministries to promote healthy and safe food for improving nutrition outcomes. Further, the position of upazila nutritionists will be created and recruitment done for all upazilas to provide technical support to field personnel/extension workers at entry points of health, agriculture, education and social welfare, that help increase the coverage and outreach of nutrition services at subnational levels.

¹³¹ UNICEF. 2013. Nutrition capacity assessment in Bangladesh

2. Strengthen institutional capacity of the Bangladesh National Nutrition Council (BNNC)
(in line with AoI 5.5.1, NPAN2 Key Action Area 6.3.14 and 6.5.10, and CIP2 Programme V.4.2)

The institutional capacity of BNNC and other institutions working on FNS programmes needs to be strengthened for effective implementation of NPAN2, CIP and NFNSP. Bottleneck analysis by BNNC points towards challenges and gaps that require strengthening with the delivery of responsibilities and terms of reference. Furthermore, existing linkages between key institutions within Bangladesh and with international institutions will be fostered for capacity building and identifying and sharing technical expertise of the institutions. This would help to identify and establish nutrition focal points with specific terms of reference and accountability across the sectors/divisions/departments/services to support in planning, resource mobilization, implementation, monitoring and evaluation of nutrition activities across sectors, at national and subnational level. The institutional capacity of the BNNC needs to be strengthened to orient the DNCC and UNCC for scaling up multisectoral approaches towards formulation of district/ upazila level multisectoral annual nutrition plan to implement minimum nutrition packages aligned with NPAN2 at subnational level.

3. Enhance human resources capacity and nutrition expertise with multisectoral training and experience (in line with NPAN2 Key Action Area 6.3.14)

Based on the human resource capacity need assessments, training and sensitization workshops will be organized to meet the demand for strengthening capacity of GoB officials from different ministries on FNS at national and sub-national levels. Food-based Nutrition training will be mainstreamed in the training of trainers, and pre- and in-service training of existing staff across sectors/departments/programmes. Periodic nutrition training that is given to agriculture extension officials will be continued. Moreover, food-based nutrition trainings and orientation workshops will be scaled up for DNCC and UNCC members to enhance their capacity on both nutrition-specific and nutrition-sensitive interventions and policies that feed into the annual multi-sectoral nutrition plan at district and upazila level in collaboration with BNNC (MoHFW), BIRTAN (MoA) and FPMU (MoFood) as well as through the trainings conducted by the DYD (MoYS). Based on the human resource capacity needs assessment, appropriate measure will also be taken to conduct training for all the field personnel relevant to nutrition service delivery.

Cross references

- NFNSP AoI 5.5.1
- NPAN2 Key Action Area: 6.3.14. Make the existing health system universal, utilize the system effectively, and estimate effective manpower needs for the purpose; 6.3.15. Filling up of vacant posts for health service delivery personnel; 6.3.20. Ensuring sanctioned post for required Nutritionists in facilities/hospitals; 6.5.10. Institutionalize BNNC Office with new structure/platforms and strengthen accountability
- CIP2 Programme V.4.2. Strengthen capacities to design and monitor the new FNS Policy and implement, monitor and coordinate the CIP2

Strategy 3.2 Enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe and nutritious diets

AoI 3.2.1 Develop and promote local foods, healthy cooking and food combinations, safe storage including knowledge on nutrient labelling

Rationale

Locally grown nutrient-dense foods have enormous benefits on health, economy, and the environment. Indeed, they are contributing to diversity in diets, can be produced in marginal land with limited inputs, do not require long supply chains and are often better adapted to their local environment with beneficial impact on the soil for example. Given the importance of nutrition in first 1000 days, nutrient-dense

recipes have been developed and are being promoted through nutrition training and mass media campaigns by a number of institutions¹³². Concurrently, expanding the range of recipes based on updated FCTs needs to continue¹³³. In Bangladesh, habitual food preparation techniques show considerable nutrient loss, especially of minerals and vitamins. Cooking rice in large volumes of water and discarding the excess water after boiling leads to loss of B-complex vitamins. Similarly, washing vegetables after cutting, results in greater loss of vitamins, and overcooking and open pan cooking methods have also shown substantial loss of vitamin C and B-complex vitamins¹³⁴. On the other hand, some traditional practices such as roasting of grains and soaking pulses before cooking make the product more digestible and reduce micronutrient losses. Likewise, steaming and mashing vegetables or fish, using potatoes and certain vegetables with skin are beneficial in preventing loss of vitamins¹³⁵. Creating awareness on appropriate cooking techniques but also on ways to keep food safe while handling, preparing, storing and serving food, so as to ensure their nutritional quality and safety is needed, along with the understanding of food labels (which AoIs 2.3.1 and 5.2.3 propose to develop).

Action Agenda

1. Promote production and consumption of local, neglected and underutilised nutritious foods (in line with NPAN2 Key Action Area 6.2.1 and CIP2 Programme III.1)

The key food list can also include indigenous and underutilised varieties/ breeds/ species to promote production and consumption of these foods (as proposed in AoIs 1.2.5 and 3.1.1). The NUS, include minor cereals, indigenous fish species, fruits, vegetables, and seeds that are not commonly consumed despite their high nutrient content. The National FBDG and FCTs should include the nutrient content of these underutilized foods and indigenous foods. The dissemination of national FBDG and FCT will encourage not only to increase the production (as advocated under AoI 1.2.1) but also to consume these indigenous foods to promote biodiversity and food diversity.

2. Develop nutrient-dense recipes (in line with CIP2 Programme III.1.)

Nutrient-dense recipes will continue to be developed, adapting them to local cultural practices and taste in order to enhance their acceptability. They will be adapted from the various recipe books for improved complementary feeding and maternal nutrition developed by Bangladesh Breastfeeding Foundation (BBF) and DAE respectively, and technically supported by FPMU and FAO. These are simple, healthy recipes using a variety of food groups to promote dietary diversity. They should be based on the FCTs and their promotion and dissemination should continue through food-based nutrition strategies integrated in horticulture, livestock, fisheries and school nutrition programmes and NNS (as proposed in AoI 3.2.1). Training and demonstrations will take place at community levels, targeting women, homestead owners, especially mothers or mothers-in law, school teachers, adolescents, school children, youth, and NGOs. The recipes can be demonstrated in nutrition trainings and in periodic nutrition fairs organized at events such as National Nutrition Week or the National Vegetable Fair. In these events, the raw ingredients and cooked dishes will be displayed side by side, to give a proper idea of the amount and portion sizes and cooked product. Recipe cards or sheets outlining the cooking method, with a list of ingredients used, nutritive values, serving size, cost, and indications of use for specific age groups may be distributed. Furthermore, video and audio recordings of the recipes being cooked can be promoted through mass media and online sources, notably, TV, Facebook, and YouTube. School nutrition activities such as Nutrition Clubs (NCs) or the Nutrition Challenge Badge (NCB) Initiative

¹³² Namely: Bangladesh Breastfeeding Foundation (BBF), BIRTAN, DAE, Bangladesh Agricultural Research Council (BARC), BARI, Bangladesh Institute of Research and Rehabilitation for Diabetes, Endocrine and Metabolic Disorders (BIRDEM), DLS, Department of Fisheries (DoF)

¹³³ Food Planning and Monitoring Unit (FPMU). 2016. Second Country Investment Plan for Nutrition-Sensitive Food Systems 2016-20 (CIP2). Ministry of Food, Government of Bangladesh

¹³⁴ Bhattacharjee L., S.K. Saha & B.K. Nandi. 2007. Food Based Nutrition Strategies in Bangladesh. DAE, MoA, UNDP and FAO

¹³⁵ Institute of Public Health Nutrition (IPHN). 2015. National Strategy on prevention and control of micronutrient deficiency, Bangladesh (2015-2024). Directorate General of Health Services. Ministry of Health and Family Welfare. Government of Bangladesh

will also be practical vehicles through which youth and adolescents can learn about healthy cooking and nutrition which will go on to positively influence themselves and their families.

3. Promote appropriate cooking techniques and safe food preparation (in line with NPAN2 Key Action Area 6.3.3)

Food-based nutrition training, BCC and mass media activities will be developed to encourage appropriate cooking techniques (AoI 2.3.1). The focus will be on key rules of healthy food preparation to reduce nutrient loss during processing and on ensuring hygiene and safety through hygienic food handling, storing, serving and consumption. Household preservation technologies such as pickling, sun drying and fermentation will be promoted to enhance shelf life of the product and conserve nutrients. Trainings and transfer of technologies on such topics and modules need to be scaled up through the DAE and upazila level agriculture extension services.

4. Develop and promote tools for Nutrition Behaviour Change Communication (NBCC) food-based nutrition training and mass-media campaign (in line with NPAN2 Key Action Area 6.3.12)

Given the evolving changes in methods of training and knowledge dissemination through virtual means, it is necessary to develop digitalized knowledge-based tools for online and social media (i.e. mobile phone-based messages or counselling, videos, messages, NCB e-learning platforms) on NBCC. Evidence suggests that integrating NBCC with nutrition-sensitive interventions has a greater impact on nutrition outcomes. Such novel promotion tools will help accelerate the scaling up of BCC and mass-media campaigns needed to create mass awareness on nutrition and food safety.

5. Promote food-based dietary guidelines with special focus on healthy diet and diversified food consumption (in line with NPAN2 Strategy 6.1.2.5, 6.1.3.3, 6.2.9, 6.3.13)

Nutrition education and Social Behaviour Change Communication (SBCC) tools such as the FBDG (updated as per AoI 3.1.1.) will be promoted. The Healthy Food Plate, which is developed based on FBDG as a nutrition counselling tool for pregnant women and the Healthy Mug using dietary diversity as a basis should be widely disseminated to enhance knowledge and practices on healthy diets across the country. A comprehensive coordinated multi-sectoral, multi-channel, advocacy, and communication strategy on nutrition in line with the National SBCC strategy needs to be developed and implemented. This should include orientation of the health care providers and extension workers on the FBDGs. These will provide dietary guidance messages to communicate to the public, what is the desirable food intake from a variety of food groups, correct serving sizes and wise food choices. It will also help understand nutrition labelling to discourage the consumption of “junk” foods.

6. Promote nutritious and safe diets in food service institutions across formal and non-formal establishments

It is essential to promote nutritious, and safe diets at institutional levels in formal establishments such as restaurants, canteens, cafeterias of hotels, schools, colleges, universities, garment factories, prisons and in street food vending services across the informal sector. There is need to increase the nutritional and hygienic quality of food items served and sold to meet the diet and nutrient needs of clients at affordable prices, especially for the lower- and middle-income groups and urban dwellers. Training and demonstrations in healthy food preparation and food safety will be provided for cooks and inmates in prisons and correctional settings, prison shops, industrial catering facilities, self-cook facilities, or cafeterias and canteens in university, hostels and schools. Nutrition education and behaviour change interventions, gardening, inclusion of healthy choices in the prison shops and culinary training will be piggybacked with such activities. Prisoners can be trained to cook and clean for themselves with an emphasis placed on culinary education, healthy foods and self-sufficiency. Awareness raising activities on nutrition and food safety, training, advocacy and BCC for managers and cooks of hotels, restaurants, canteens and street vendors will require scaling up. To this end, CAB and BFSA will play an important role to promote dietary guidelines, food safety messages and implement the Safe Food

(Restaurant) Regulations, 2020 and Food Safety (Food Hygiene) Regulations 2018 developed under Bangladesh Safe Food Act, 2013 by BFSA (in line with AoI 5.1.2).

Cross references

- NFNSP AoI 1.2.1; 2.3.1.; 3.1.1; 5.1.2; 5.3.3.
- NFP CIP2 Programme III.1. Enhanced nutrition knowledge, promotion of good practices and consumption of safe and nutritious diet
- NPAN2 Strategy 6.1.2.5 Promoting use of dietary guidelines for adults and elderly persons suffering from non-communicable diseases such as hypertension, diabetes mellitus, cardiac diseases and other; 6.1.3.3 - Major activities – Update Healthy Dietary Guidelines/protocols including focus on TB & HIV/AIDS, cancers, renal and hepatic diseases, etc.
- NPAN2 Key Action Area 6.2.1. Strengthening of integrated homestead food production (fruits and vegetables, small livestock, aquaculture, comprehensive nutrition education) with emphasis on indigenous, underutilized and nutritious varieties/species/breeds) and gender sensitive and climate smart technologies; 6.2.9. Promoting of FBDG for healthy diet; 6.3.3. Promoting appropriate Infant and Young Child Feeding (IYCF) practices; 6.3.12. Developing a comprehensive, integrated Multi-channel PoA for SBCC with involvement of key relevant stakeholder; 6.3.13. Promoting FBDG with special focus on diversified food consumption.

AoI 3.2.2. Scale-up integrated nutrition education strategies to enhance consumption of healthy, diets, increase awareness of the nutrient composition of local foods as well as to prevent and control malnutrition (undernutrition and overnutrition)

Rationale

Lack of nutrition awareness, poor diet quality and inadequate diversity are among the immediate causes of malnutrition. Diets are largely cereal based, providing around 66% of the dietary energy, with consumption of animal source food, fruits and vegetables remaining below normative recommendations¹³⁶. Cultural taboos, lack of nutrition awareness and gender inequity remain barriers that restrict the consumption of a healthy and diversified diet, especially for women and children. Integrating food-based nutrition education activities with agricultural and health interventions are shown to impact household diet quality, dietary diversity, and nutrition outcomes^{137,138}. With the country transiting to middle-income status, rapid urbanization and globalization are influencing the country's food culture. This has increased the availability of cheaper, high calorie, low nutrient-dense foods in the market that attract adolescents and youth. Increased intake of such foods contributes to a risk of overweight, obesity and diet-related diseases¹³⁹. It is critical to ensure adequate nutrition for children and adolescents as this is intrinsically linked to the health of future generations. Nutrition education strategies need to promote knowledge on the importance of local foods, its use in preparing healthy diets and lifestyle approaches to prevent and control malnutrition among children, adolescents, and youth.

¹³⁶ Ministry of Food, Ministry of Health and Family Welfare & FAO. 2015. Dietary guidelines for Bangladesh. Government of Bangladesh

¹³⁷ Saha, M., M.A. Maman, & L. Bhattacharjee. 2016. Mainstreaming Nutrition into Agricultural Extension Services: Lessons Learned from the Integrated Agriculture and Poultry Nutrition Projects in Bangladesh. Published by the USAID funded Integrating Gender and Nutrition within Agricultural Extension project, INGENAES.

¹³⁸ Akhter, A. & and J. Ghoshlaw. 2019. Diversifying rice-centric agriculture and diets: The Bangladesh experience. In Agriculture for improved nutrition: Seizing the momentum. Chapter 15. Fan, Shenggen, Yusuf, Sivan; Pandya-Lorch, Rajul (Eds.). Wallingford, UK: International Food Policy Research Institute (IFPRI) and CABI.

¹³⁹ <https://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/diet-and-weight/>

Action Agenda

1. Integrate nutrition components with homestead food production (in alignment with NPAN2 Key Area of Intervention 6.2.1 and AoI 3.2.1)

Diversified and integrated homestead food production, backyard poultry and small livestock, aquaculture linked with nutrition education/training need to be scaled up through farmer field schools, women farmer groups and village-based organizations, as part of dietary diversification. Nutrition education and training activities will be strengthened across the DoF and DLS to promote rearing of small indigenous species such as the vitamin A-rich mola carp (Amblypharyngodon mola) and dhela (*Osteobrama cotio*), and local poultry and indigenous breeds of small livestock (see AoI 3.2.1), to enhance the production and consumption of animal source foods for nutrient adequacy of diets.

2. Promote “adolescent nutrition and healthy lifestyle” through formal and informal academic curriculum/training and SBCC programs (in line with NPAN2 Key Action Area 6.3.7 and AoI 3.1.3)

Formal and informal nutrition means to disseminate knowledge on healthy diets and lifestyle to adolescents must be scaled up. Within the purview of formal nutrition education, through orientation and trainings, school management staff and teachers will be made to understand the importance of dietary guidelines for improving diets, adopting correct food habits, healthy lifestyle, and improving the environment which in turn can enhance educational performance. Orientation and training on adolescent nutrition should be continued for relevant stakeholders in line with the National PoA for Adolescent Health Strategy 2017-2030. School teachers, parent teacher associations, agriculture extension and health officials who are engaged in nutrition outreach activities through sectoral services will also be targeted (see AoI 3.1.3). School-based informal education activities such as cooking demonstrations of nutrient-dense recipes (AoI 3.2.1) will be scaled up for SBCC programmes. These will be linked with wider platforms such as the Nutrition Club (NC), Community Support Groups, Girl Guides and Boy Scouts. The annual Nutrition Olympiad initiated with technical support from FAO and implemented through the MoFood, national NGOs and social enterprise agencies will be celebrated with wider engagement of the NC members and students, to build nutrition leadership and capacity among youth and adolescents through youth networks at national and regional levels. The NCB initiative will also be scaled up to help children and youth to learn about the importance of healthy food choices and lifestyles, food safety practices and how sustainable diets can help reduce impacts on our environment. Awareness creation on the effects of unhealthy processed and commercial foods on overweight and obesity and consequent NCDs is essential and is integral to the NCB initiative. The National Dietary Guidelines 2020 which include age- and disease specific guidelines will be promoted through school-based nutrition education programmes and NNS. The health seeking behaviour of adolescents, young and teenage couples will be enhanced through facility and community-based approaches linking with School health program/little Doctor program/Adolescent Reproductive & Sexual Health.

3. Update nutrition curriculum (formal/informal) at different levels of academic institutions (in line with NPAN2 Key Area of Intervention 6.3.8 and 6.5.2)

The nutrition curriculum for different levels of formal and informal academic learning will be updated with emphasis on both nutrition specific and nutrition-sensitive issues of public health significance. Besides, nutrition content of curricula in primary and secondary schools, medical and nursing institutions will be reviewed and updated. Key nutrition messages will be included in the cover and rear pages of the school text or exercise books to enhance exposure. A curriculum review will also be undertaken in collaboration with the MoE and the School Textbook Board, to ensure appropriate inclusion of nutrition education for both boys and girls, alike. Interactive e-learning nutrition material that has been developed from the NCB initiative is expected to be disseminated through an e-learning platform through MoFood

Cross references

- NFNSP PoA AoI. 3.1.3.; AoI 3.2.1.
- NPAN2 Key action area 6.2.1. Strengthening of integrated homestead food production (fruits and vegetables, small livestock, aquaculture, comprehensive nutrition education) with emphasis on indigenous, underutilized, and nutritious varieties/species/breeds) and gender sensitive and climate smart technologies; 6.3.7. Promoting “Adolescent Nutrition and healthy lifestyle” through formal and informal academic curriculum/training program, and enhancing health seeking behaviour by adolescent/ young couples/teenage couples through facility and community-based approaches; 6.3.8. Updating nutrition curriculum (formal/ informal) at different levels of academic institutions; 6.5.2. Strengthening/integrating nutrition education in regular formal and informal curricula of primary and secondary educational institutions
- National PoA for Adolescent Health Strategy 2017-2030

Strategy 3.3. Optimise food utilization through provision of safe water, healthy diets and improved food hygiene and sanitation

AoI 3.3.1. Expand programs for immunization (EPI), control of acute respiratory infection (ARI), prevention of cholera and diarrhoeal diseases

Rationale

A strong relationship exists between malnutrition, infection, and child mortality, because poor nutrition leaves children underweight, weakened, and vulnerable to infections. Incomplete vaccination schedule is also strongly correlated with prevalence of underweight¹⁴⁰. In Bangladesh, the prevalence of ARI and diarrhoea among children under 5 in the last two weeks has been reported as 3% and 4.7% respectively, and only 86% of children age 12-23 months have received all basic vaccinations¹⁴¹. Suboptimal breastfeeding practices, inadequate complementary foods, poor anthropometric status along with food insecurity are identified as important risk factors for ARI and diarrhoea,^{142,143} which are linked to greater morbidity via inadequate nutrient intake, all of which affect immune function. Contaminated complementary foods due to poor water and food quality, unclean cooking and serving utensils, inadequate handwashing practices¹⁴⁴ are also risk factors for diarrhoeal episodes¹⁴⁵. Disparities in health seeking behaviour among poor rural households along with weak execution of nutrition services within community based Integrated Management of Childhood Illness (IMCI) and Primary Health Care (PHCs) have also been identified as additional challenges to addressing childhood illnesses.

Action Agenda

1. Continue expanding child nutrition services via community based IMCI (in line with NFP PoA Key Area of Intervention 3.7 and NNS OP 10.A.10)

The Government will seek to achieve universal coverage of IMCI to reach community level and hard-to-reach areas. A community-based prevention approach to malnutrition via integration and delivery of

¹⁴⁰ Solis-Soto, M.T., D. Paudel & F. Nicoli. 2020. Relationship between vaccination and nutritional status in children. *Demographic Research*, January - June 2020, Vol. 42, pp. 1-14.

¹⁴¹ BDHS 2017-2018

¹⁴² Ullah et al. *BMC Paediatrics*. 2019. Factors associated with diarrhoea and acute respiratory infection in children under two years of age in rural Bangladesh. 19:386 National Strategy on prevention and control of micronutrient deficiency, Bangladesh (2015-2024). Government of Bangladesh

¹⁴³ Sultana M., A.R.Sarker, S.N. Akram R, A.N. Mahumud *et al.* 2019. Prevalence, determinants, and health care-seeking behaviour of childhood acute respiratory tract infections in Bangladesh. *PLoS ONE* 14(1): e0210433.

¹⁴⁴ Luby *et al.* *Lancet Global Health*. 2018. Effects of water quality, sanitation, handwashing, and nutritional interventions on diarrhoea and child growth in rural Bangladesh: a cluster randomised controlled trial. 6: e302-15.

¹⁴⁵ Mostafa *et al.* *Acta Paediatrica*. 2018. Children living in the slums of Bangladesh face risks from unsafe food and water and stunted growth is common. pp. 1230-1239

Essential Health Service Package (ESP) which includes nutrition services such as early initiation and six-month exclusive breastfeeding, timely initiation of complementary feeding, immunization, zinc therapy during diarrhoea, vitamin A supplementation, anaemia/ARI management and deworming of children should be prioritised within PHC and community clinics. Coverage of immunisation has to be scaled up particularly in hard-to-reach *haor* and remote hilly areas, and in urban slums. NNS can provide support for technical interventions under IMCI which includes development and delivery of training modules, capacity building and monitoring implementation of technical interventions.

2. Strengthen social behaviour change communication (SBCC) to promote consumption of safe food and water for healthy diets and nutrition of children (in line with the 8FYP, NNS OP 10.A.2, NPAN2 6.4.4., CIP2 Programme V.1.4. and NFPNSP Strategy 5.1)

Positive nutrition practices will be promoted through SBCC and sensitisation on uptake of essential nutrition services as well as on food safety and healthy diet (see AoI 3.2.2.), and related complementary issues such as water and sanitation, EPI, and prevention of NCDs by public and private facilities. Joint intersectoral actions such as the development and procurement of BCC materials, promotion of mass-media campaigns, national nutrition events, technical support to other Operational Plans (OPs), development of policy guidelines and coordination with NGOs/other stakeholders involved in the implementation of BCC activities, can help build a momentum around health seeking behaviour among communities. Demand for safe food and water must be created through increased awareness among adolescents, pregnant and lactating women. Hygiene and sanitation interventions should be coupled with food safety education and consumer awareness among food preparers in the household, school children and men who often take care of food shopping. Women should be especially prioritized for BCC given their multiple roles in the household - preparing the food, distributing it, feeding children, storage and preservation, especially in the case of preparing and processing complementary to feed prevent the microbial contamination through unhygienic handling of food and water. The production and dissemination of materials on food safety through the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning should be continued, adapted, and also disseminated to DLS, DoF and DAE. Televised messages should go beyond public service messaging and can be incorporated in existing children's programmes, local folklore and popular serials, to help strengthen the scale up of BCC. The BCC work undertaken by the Bangladesh Food Safety Network (BFSN) should be expanded and integrated efforts made to create public awareness about food hygiene, to enhance overall nutrition improvement of children and reduce morbidity.

3. Strengthen research collaborations to better understand infection-malnutrition interactions

Infections are common in the first two years of life and an integrated view of health and food systems is critical for an understanding of the influence of nutritional homeostasis for health and well-being. As we begin to understand the immune response and the intestinal microbiota, the mechanisms through which they influence nutrition and child growth remain unclear¹⁴⁶. The impact of infection and sub-clinical conditions on nutrition and child growth/development (including birth outcome), and the interactions between nutrition and infection also need to be better understood. Research collaborations will be explored with academia and agencies such as icddr, who undertake advanced studies in this area and further explore the effects of environmental enteropathy and malabsorption on nutritional interventions and early growth/development. Additionally, understanding the impact of scaling up prevention and control measures of infections in malnourished children/populations, or those at risk of becoming malnourished is essential.

Cross references

- NFNSP PoA AoI 3.2.2.; Strategy 5.1.
- NFP PoA (2008-2015) AoI 3.7. Women and children's health
- 8FYP 2020-2025

¹⁴⁶ Belkaid Y *et al.* 2014. Role of the Microbiota in Immunity and inflammation, *Cell*. 2014 Mar 27; 157(1): 121–141

- CIP2 Programme V.1.4. Enhance food safety education, consumer awareness and food safety networks
- NPAN2 Key Action Area 6.4.4. To combat different types of infection (diarrhoea, pneumonia, environmental enteropathy) that adversely affect child nutrition, motivate people to follow hygiene practices, especially washing hands with soap
- NNS Operational Plan Priority Interventions and Activities A2. BCC to Promote Good Nutritional Practices; A10. Coordination with IMCI program

AoI 3.3.2. Strengthen the implementation of National Nutrition Services (NNS) delivery integrated with community clinics targeting children and women suffering from persistent weakness and micronutrient deficiencies

Rationale

Micronutrient deficiencies can have major adverse health consequences, contributing to impairments in growth, immune competence, cognitive development and poor reproductive outcomes. The first 1000 days of life serves as a critical window to reverse the situation by nutrition interventions. In 2011-12, over 50% children of 6 to 59 months of age reported zinc deficiency, while 2 in 5 preschool children and 71.5% of non-pregnant and non-lactating women reported vitamin D deficiency¹⁴⁷. Subsequent studies have indicated that a significant proportion of preschool-age children showed deficiencies in vitamin A (20.5 %), zinc (44.5 %) and vitamin D (39.6 %); about a third of these children are also anaemic, and 10.7 % of the children are iron deficient. A high proportion of non-pregnant and non-lactating women are deficient in zinc (57 %) and iodine (42 %), while one-quarter of women live with anaemia and vitamin B12 deficiencies¹⁴⁸. The aetiology of micronutrient deficiencies is multi-factorial, with household food insecurity, poor quality diets, lack of nutrition awareness, intra household food disparity, along with genetic, parasitic and infectious diseases, all playing a role¹⁴⁹. Despite the situation, the coverage of micronutrient supplementation remains low¹⁵⁰. Critical challenges relating to service delivery at community levels for iron-folic acid supplementation for lactating women and adolescent girls and for multiple micronutrient powder for 6–23 month-olds have also been identified¹⁵¹. Similarly, though calcium supplementation during pregnancy has been included in the NNS operational plan (OP), the modality of service delivery has remained undefined.

Action Agenda

1. Strengthen availability of dietary data for vulnerable groups suffering from micronutrient deficiencies

Dietary diversity as measured by Minimum Dietary Diversity for Women (MDD-W) is a proxy indicator of diet quality and micronutrient adequacy in the diet. Those who consume at least five or more of the ten food groups daily have a greater likelihood of meeting the requirement for 11 micronutrients¹⁵², of which four are of public health importance. Unlike the MAD or MDD for children, MDD-W is not covered by the major national level surveys or assessments. For example, it is not included in BDHS, Bangladesh Maternal Mortality and Health Care Survey (BMMS) or Sample Vital Registration System (SVRS) which focus on health indicators. HIES discuss dietary diversity of households, but do not provide gender disaggregated data nor ranges of food group data. Due to unavailability of appropriate national data on MDD-W, an update on dietary adequacy of micronutrients

¹⁴⁷ icddr, UNICEF, GAIN and IPHN. 2013. National Micronutrient Status Survey 2011-2012 Final Report; this figure is based on serum vitamin D levels < 50.0 nmol/L.

¹⁴⁸ Ahmed, F., Prendiville, N., & Narayan, A. 2016. Micronutrient deficiencies among children and women in Bangladesh: Progress and challenges. *Journal of Nutritional Science*

¹⁴⁹ Ministry of Health and Family Welfare. 2017. *Op. cit.*

¹⁵⁰ World Bank. 2015. Bangladesh National Nutrition Services. Assessment of Implementation Status

¹⁵¹ World Bank. 2015. *Op. cit.*

¹⁵² Vitamin A, Thiamine (B1), Riboflavin (B2), Niacin (B3), Pyridoxine (B6), Folate (B9), Cyanocobalamin (B12), Vitamin C, Calcium, Iron, and Zinc.

among women of reproductive age is not available nor has it received the required attention¹⁵³. Population-weighted, nationally representative nutritional and dietary data on adolescent boys and girls is lacking and should be reported by disaggregated sub-populations, to provide better programmatic guidance on addressing micronutrient deficiencies¹⁵⁴. Indicators that measure gender disaggregated dietary diversity must be incorporated into national surveys and nutrition portals such as the National Information Platform for Nutrition (NIPN) and Nutrition Information and Planning Unit (NIPU) and Food Security and Nutrition Information Systems (FSNIS) for regular monitoring.

2. Promote food-based approaches within programs to combat micronutrient malnutrition (in line with NMDCS Strategic Area 3.1.2)

To enhance availability of micronutrient rich foods, production and consumption of small livestock, poultry, eggs, dairy, fisheries and horticulture can be promoted. Integrating nutrition education with production strategies should be encouraged, ensuring the produce is not only sold for cash but consumed by households/individuals at high risk of micronutrient deficiencies. Field linkages between agriculture relevant departments (DAE, DoF and DoL) and DGHS will be strengthened for increasing productivity and consumption of micronutrient rich foods that contribute to healthy and sustainable diets. Government policies and programmes will be directed towards the goal of increasing production of and access to micronutrient rich foods, in combination with marketing and education strategies built into micronutrient interventions to improve their consumption. As part of nutrition-sensitive approaches, innovative programmes on nutrition-sensitive food systems such as integrated household farming, and promoting home-based beneficial traditional practices for improving micronutrient intake (incorporating dietary enhancers such as lemon, tamarind, sour fruits and related ingredients in preparations and reducing inhibitors of micronutrient absorption in plant-based diets through roasting, soaking, germination, fermentation) will be recommended. Bio-fortification of zinc and vitamin A in crops that are ongoing strategies, need scaling up (AoI 1.1.1.). Promotion of home gardening through women-centred community actions in at least two-thirds of households linked with community clinics, nutrition training through farmer field schools and improving access to high quality seeds (AoI 1.1.5), tools and materials can play a role in improving the micronutrient status of communities. Integrated horticulture strategies from upazila to union levels along with establishing school gardening should also be promoted in line with relevant national programmes.

3. Accelerate mainstreaming of nutrition services within the proposed delivery platforms of NNS

For improved child nutrition, coverage and outreach of iron supplementation (micronutrient powder) should be accelerated through community based IMCI and community clinics. Similarly, other micronutrients of public health importance like Vitamin D and calcium supplementation should also be mainstreamed within nutrition services. Several delivery platforms have already been proposed under the NNS OP for mainstreaming iron folic acid supplementation to PLW and adolescent girls, deworming for adolescent girls and post-partum vitamin A supplementation, within the community clinics. However, there are too many intervention areas in the original OP for NNS to deal effectively within the required time span. A smaller set of actionable interventions can lead to a clarity of implementation needs for each intervention-delivery platform. Multisectoral feasibility assessments, technical review missions, and other learning approaches will be integrated to assess the delivery of a few prioritised interventions for combating micronutrient deficiencies.

AoI 3.3.3. Scale up the supply and use of safe water for consumption and domestic use

Rationale

Safe drinking water is a prerequisite for utilization of food for nutrition. Industrial discharges, municipal waste, agrochemicals, salinity intrusion and arsenic contamination all contribute to water pollution in

¹⁵³ Bangladesh National Nutrition Council. 2020. Assessment of the Key Bottlenecks for the Coverage of Nutrition Sensitive Interventions and the Underlying Causes

¹⁵⁴ GAIN. 2018. Adolescent nutrition in Bangladesh. Dhaka. Bangladesh.

Bangladesh¹⁵⁵. Continuous build-up of arsenic in the soil from contaminated irrigation water reduces crop yields and impacts agricultural sustainability and food safety¹⁵⁶. Arsenic in the food chain poses a dietary risk to human health in addition to the risk from drinking contaminated groundwater¹⁵⁷. Contamination with manganese, chloride and iron also reduces the quality of drinking water. While 98% of households have access to basic drinking water, it is overwhelmingly contaminated with E-coli at source and household levels, including amongst the richest households¹⁵⁸. Frequent leakage of pipelines could be reason for contamination of water along with adding to water wastage. Inequitable water access particularly among informal settlements in terms of insufficient water, intermittent water supply and inflated water rates due to illegal supply are other challenges adding to the water woes in urban slums¹⁵⁹. Limited investments in infrastructure development related to water treatment facility, water storage, transmission and distribution network also limit access to clean water¹⁶⁰. Almost a quarter of households spend more than 30 minutes each day collecting water, with women and young girls (90%) largely responsible for water collection. Difficulty in accessing safe water for drinking and household use impacts women's empowerment by increasing time spent on searching for safe water, thereby mitigating their engagement in productive endeavours. Lack of access to safe water impinges on household healthcare and increases the household's expenses and women's time in providing care services. The limited capacity of the Department of Environment as a monitoring and enforcing body on water quality along with limited resources and water testing facilities are also factors that severely undermine the quality of available water¹⁶¹.

Action Agenda

1. Promote nationwide supply of safe water to impact household nutrition

The PP2041 plans to achieve 100% and 50% tap water connectivity to urban and rural households respectively by 2041. Introducing water supply projects in urban areas and installing piped water supply for the urban poor will constitute an important area of intervention. Private sector investment will be explored to support for scaling up the provision of safe water from the water source to the point of consumption, including in-house handling, for piped and non-piped water supply systems¹⁶². The number of tube wells in rural areas (currently one for every ten households) will be increased and water supply options will be installed to minimize arsenic contamination, excessive iron and salinity, in consonance with interventions proposed in the 8FYP. Emphasis will be on underserved, unserved and hard-to-reach areas which are the malnutrition hotspots¹⁶³. The provision of safe adequate water in healthcare facilities is imperative to prevent infections and spread of disease, protect staff and patients, and "uphold the dignity of vulnerable populations including pregnant women and the disabled"¹⁶⁴. Provision of safe water supply and training on safe water use will be provided to schools towards promoting hygienic habits in learning environments to allow children to make the most out of their education through better health. Within emergency programming, self-supply and distribution of Water, Sanitation and Hygiene (WASH) items (home water treatment products, soap and hand washing stations) to the households of undernourished children/PLW is another relevant activity that could be undertaken within the framework of WASH and nutrition integrated programming towards reducing water borne diseases and fatality among children.

¹⁵⁵ General Economics Division. 2020. Eighth Five Year Plan July 2020. Bangladesh Planning Commission. Government of Bangladesh

¹⁵⁶ Heikens, A. 2006. Arsenic contamination of irrigation water, soil and crops in Bangladesh: Risk implications for sustainable agriculture and food safety in Asia, FAO, Regional Office for Asia and the Pacific, Bangkok.

¹⁵⁷ MICS 2019

¹⁵⁸ *Ibid.*

¹⁵⁹ BIGD 2019. State of Cities 2018: Water Governance in Dhaka. BRAC Institute of Governance and Development (BIGD), BRAC University.

¹⁶⁰ World Bank. 2019. Bangladesh Municipal Water Supply and Sanitation Project.

¹⁶¹ General Economics Division. 2020. Eighth Five Year Plan July 2020. Bangladesh Planning Commission. Government of Bangladesh

¹⁶² Local Government Division. 2014. National Strategy for Water Supply and Sanitation 2014. Ministry of Local Government, Rural Development and Cooperatives. Government of Bangladesh

¹⁶³ Integrated Phase Classification (IPC) Report 2020

¹⁶⁴ WHO/UNICEF (2015). Water, sanitation and hygiene in health care facilities: status in low- and middle-income countries and way forward.

2. Promote the importance of safe drinking water for prevention of diseases

Awareness raising campaigns along with emotional/social drivers will be conducted towards ensuring attention to the issue of safe water supply (see AoI 5.1.3). Research findings show a 40% stronger protective effect for water quality interventions at the household level than at source level on diarrheal disease outcomes¹⁶⁵. To remove coliform and other pathogens and enable good quality of water for drinking purposes, effective low-cost “point of use” traditional interventions will be promoted, notably: boiling, chlorination, solar disinfection, UV radiation, SONO¹⁶⁶, filtration, traditional filtration, combined chemical coagulation and flocculation¹⁶⁷. Household water treatment and safe storage for improved diets and nutrition should take into account all steps in the water chain¹⁶⁸. Increasing water quantity available to households can be enhanced by promoting more storage facilities and rainwater collection jars/containers to increase the quantity of water delivered, the frequency of water available and the amount of water used at household level, all factors that influence health.

3. Support R&D on under-explored areas related to impacts of contaminated water on food safety

Water quality monitoring (arsenic and saline screening) and surveillance programmes along with R&D on appropriate and affordable technologies will be undertaken for scaling up safe drinking water availability. Efforts will be made to upgrade the capacity of Pourashavas¹⁶⁹ and Water Supply and Sewerage Authority (WASA) for planning, designing, implementation and management of urban water supply. Department of Public Health Engineering (DPHE) will have appropriate institutional linkage for this purpose. Underexplored areas of research and knowledge gaps related to unavailability of data on arsenic in livestock and freshwater fisheries limit our understanding of the risks of arsenic to animal health and the safety of food products from these sectors. Reliable human health risk assessments for arsenic in foods also cannot be made currently. There is inadequate information on the risks of arsenic in water and fodder to livestock and their food products¹⁷⁰. Innovative research to inform the uptake of nutrition-sensitive interventions like use of saline water for fish/shrimp farming, rice farming and planting of saline-tolerant fruit trees such as guava, jackfruit, sapodilla, hog plum, and pomelo, will help mitigate the effects of saline water intrusion and its impact on food production and consumption.

Cross references

- NFNSP AoI 5.1.3.
- 8FYP 2020-2025

AoI 3.3.4. Improve sanitary facilities and hygiene practices, including the prevention of animal to human transmission of disease and prevention and control of food and water-borne illness

Rationale

Poor sanitation and hygiene have a synergistic effect on malnutrition with infectious disease, especially diarrhoea exacerbating the situation. Inadequate sanitation and hygiene cost Bangladesh an estimated of USD 4.23 billion, which is 6.3% of its GDP¹⁷¹. Unhygienic practices among food handlers with regard to cooking and processing of foods coupled with unsanitary environments in restaurants and fast-food outlets in Bangladesh’s food industry is common. According to estimates from icddr, b, and WHO, at least 501 people in Bangladesh visit hospitals every day for diarrhoeal diseases that are related

¹⁶⁵ Brown J., S. Cairncross, JHJ. Ensink. 2013. Water, sanitation, hygiene and enteric infections in children. Archives of Disease in Childhood; 98:629-634

¹⁶⁶ The SONO filter is patented as the “Arsenic Removal Filter” (Patent No. 1003935, 2002) with the Department of Patents, Design and Trademarks of Bangladesh

¹⁶⁷ WASH’ NUTRITION (2017). A practical guidebook on increasing nutritional impact through integration of WASH and Nutrition programmes. Action Against Hunger and UNICEF.

¹⁶⁸ Water chain – source, collection and transport, treatment, storage and use.

¹⁶⁹ Local government municipalities of Bangladesh

¹⁷⁰ FAO. 2006. Arsenic contamination of irrigation water, soil and crops in Bangladesh: Risk implications for sustainable agriculture and food safety in Asia. Regional Office for Asia and the Pacific

¹⁷¹ Water and Sanitation Program. 2012. Economic Impacts of Inadequate Sanitation in Bangladesh. Flagship Report

to issues of food safety¹⁷². Inadequate solid waste management whereby only between 44 and 76% of the total municipal solid waste is currently being collected, creates an unhygienic environment that puts human health at risk. Furthermore, an estimated 20% of highly infectious biomedical waste often ends up in the sewage systems which can lead to various communicable diseases¹⁷³. Transmission of diseases from animals to humans also has negative consequences on nutritional status of those infected. Diseases in animals impact the quantity and quality of food produced, such as meat and milk. Inadequate animal shelters and faulty animal faeces disposal are common reasons for contamination of the household environment. Faecal contamination of play areas and feeding environments reported in 66% of households has been a major source of environmental enteropathy among young children¹⁷⁴. Likewise, microbial contamination of milk and eggs, acute toxicity due to aflatoxins and chemical residues in foods are other food safety threats that impact child nutrition¹⁷⁵. Unhygienic animal handling, inadequate animal health and veterinary services coupled with a lack of “soft” skills in livestock programmes are additional challenges¹⁷⁶. Animal disease surveillance and control needs to be scaled up and targeted for maximum effect of actions on prevention of food and water borne illness¹⁷⁷.

Action Agenda

1. Ensure sanitary and hygienic handling of food at household and community levels with regard to food production, processing, storage, preparation

To minimise risks of food contamination, action will be needed at all stages of the food chain from “farm to fork” delivery points. Trainings and demonstrations will be provided to DLS extension officials at subnational levels (see AoI 1.1.2). Appropriate animal husbandry and veterinary services will be scaled up, and steps taken for careful clinical examination of the health of animals, sanitary, hygienic handling and slaughter, safe transport and monitoring, inspection of carcass and analysis, processing, storage and distribution at markets. Integrity of the cold chain and verification of hygiene, and finally at the consumption level where safe animal food is provided to the consumer, are critical points that will be adhered to. At the consumption level, training, education and sensitization/promotional activities will be promoted among food handlers (at household level and at eateries) for safe, sanitary and hygienic food handling practices, cooking and preservation, safe storage and protective display that are crucial to reducing microbial contamination in food and preventing animal to human disease transmission following WHO’s 5 keys to safer foods¹⁷⁸ (see AoI 5.1.3). Promotional community mobilization activities focusing on personal hygiene, and importance of handwashing will also be emphasized.

2. Promote measures to ensure health of animals for safe diets (in line with CIP2 Priority Intervention 1.3.4 and 8FYP)

Promoting development of protective poultry housing¹⁷⁹ and animal shelter is a two-pronged approach to prevent transmission of diseases from animals to humans. Implementation of these simple procedures and measures will prevent entry of disease agents into a farm or the exit of the disease agent from

¹⁷² Ali, A. 2013. Food Safety and Public Health Issues in Bangladesh: A Regulatory Concern. *European Food and Feed Law Review*, 8(1), 31-40

¹⁷³ General Economics Division. 2020. Eighth Five Year Plan July 2020. Bangladesh Planning Commission. Government of Bangladesh

¹⁷⁴ Ngure F.M., B.M. Reid BM, J.H. Humphrey, M.N. Mbuya, G. Pelto & R.J. Stoltzfus. 2014. Water, sanitation, and hygiene (WASH), environmental enteropathy, nutrition, and early child development: making the links. *Ann N Y Acad Sci. Jan*; 1308:118-28.

¹⁷⁵ FAO. 2020. Nutrition and livestock - Technical guidance to harness the potential of livestock for improved nutrition of vulnerable populations in programme planning. Rome.

¹⁷⁶ World Organization for Animal Health OIE. 2015. PVS GAP analysis Mission Report. Bangladesh

¹⁷⁷ Hill *et al.* 2018. The impact of surveillance and control on highly pathogenic avian influenza outbreaks in poultry in Dhaka division, Bangladesh. *Research Article. PLOS Computational Biology*

¹⁷⁸ Keep clean, separate raw and cooked food, cook thoroughly, keep food at safe temperature and use safe water and raw materials

¹⁷⁹ Such housing entails adequate ventilation, sanitary shelter, adequate drainage, enough space along with wholesome and adequate food and water.

infected premises. Such measures will also ensure that animals remain in containment zones, thereby reducing human exposure to animal faecal contamination in domestic environments. Interventions promoting animal welfare management will also be necessary to ensure healthier animals which in turn contribute to safe animal source foods for healthier diets. Policy support¹⁸⁰ will be provided to scale up the development and delivery of private and community-based veterinary services, including diagnostic centres, clinics, and hospitals. An autonomous quality control agency will be established to ensure quality of veterinary drugs, vaccines, feeds, feed ingredients and breeding tools and materials along with adherence to treatment and bio-security guidelines along the principles of “one health” (see AoI 1.1.8). Measures will be taken to extend veterinary services up to union level with adequate service providers and infrastructure facilities. Efforts to prevent transmission will be made through DLS, animal husbandry and veterinary services. Existing resources will be devoted to these joint activities including laboratory analysis, surveillance, and outbreak investigation. Field capacity for detecting transboundary animal diseases will be strengthened and a network of laboratories will be established with capacity for receiving and analysing specimens for the diseases (see AoI 5.1.1.).

3. Establish and promote garbage disposal and recycling of waste for environmental hygiene and human health protection

For management of solid waste, cost-effective interventions involving waste reduction programmes and recycling strategies are identified as a priority. This will be complemented with tax rebates and financial incentives for the production of environmentally friendly products, including energy efficient appliances, recycled materials and sustainable paper products. The public sector alone cannot handle the large service gaps related to safe disposal of garbage. It will therefore be incentivised for investment in solid waste recycling. Improved waste management which includes proper collection, segregation for reuse, recycles and environmentally sound disposal will be promoted. Capacity building of concerned stakeholders, public awareness campaigns, strengthening monitoring and enforcement¹⁸¹ and preparing waste management master plans for improved waste disposal will be implemented. In addition, in line with WHO protocols, the government will develop a standard medical waste management policy and strategy to highlight the management of the waste generated at different health-care facilities. The policy will build awareness within hospital staff, the public, waste pickers, and *tokai*¹⁸² about the risks involved and proper segregation procedures. Government and private hospitals will establish central incinerators system with their own human resources. Improved communication and sharing of information about the risks from medical waste among all stakeholders is important, and public awareness will be necessary to activate government policy and public demand for proper treatment and human health protection.

Cross references

- NFNSP AoI 1.1.2; 1.1.8; 5.1.1.; 5.1.3.
- 8FYP 2020-2025
- CIP2 Priority Intervention 1.3.4
- Strategic Plan of BFSA (2016-2021)- Draft
- Bangladesh CIP for Environment, Forestry and Climate Change (2016-2021): priority investment area under sub-programme 2.2.1

¹⁸⁰ Synergy for all activities will be established with the ongoing World Bank-supported Livestock and Dairy Development Project Project.

¹⁸¹ In line with priority investment area under sub-programme 2.2.1 of the Bangladesh Country Investment Plan for Environment, Forestry and Climate Change (2016-2021)

¹⁸² Garbage collectors

5. Areas of intervention to achieve Objective 4 of the PoA

Objective 4: To increase access to nutrition-sensitive social protection and safety nets across lifecycle with a focus on vulnerable groups and regions

Strategy 4.1. Improve management of the public food stock and distribution system

AoI 4.1.1. Inform decision-making and improve planning for price support to farmers, market stabilization and public food distribution

Rationale

Food price volatility can deter farmers from making investments in more efficient technologies, mechanization and GAP. Low prices can even dissuade them from growing food altogether. The impact of price volatility is likely to be acute on poor and vulnerable people which can lead to political instability. Rice price volatility is often cyclic with, for example, a reduction in farmers' income during harvest time or periods of glut. For the most vulnerable, the worst time is the pre-*boro* harvest period of March-April, which is usually associated with a seasonal food price peak. In response to this, the Government needs to support farmers' prices while continuing to ensure access of staple food by the most vulnerable at all times by stabilizing prices and distributing food through the Public Food Distribution System (PFDS) when required. To ensure effective implementation of the public food management activities, the NFNSP proposes to maintain stocks of 1.05 million metric tons of foodgrain at the beginning of the financial year with due consideration to the seasonal changes in government procurement and distribution needs. Domestic rice procurement is the instrument used to build rice stocks for the PFDS and notably OMS for price stabilization purposes at consumer level, but also the one to maintain a floor price to support farmers (see AoI 2.1.3). Deciding when, how much, and at what price to procure foodgrain from farmers such that the market remains competitive and the price is profitable for farmers while fulfilling PFDS requirements even in unpredictable times of disasters and emergencies, is a challenge the Government faces on a seasonal basis. Anticipating the role that public and private imports should have in rice price stabilization, especially in the case of domestic production shortfalls, is also a complex process. This AoI proposes measures to make decision-making more efficient. In addition to foodgrain, the Government recognizes the need to widen the nature of the food distributed to include nutritious foods, to enhance dietary diversity among the most vulnerable sections of the population.

Action Agenda

1. Improve monitoring of foodgrain prices, stock, domestic production, and imports to inform procurement and PFDS decisions

FPMU compiles several reports¹⁸³ based on available information from different inter-ministerial agencies and institutions - DAM for prices, DAE and BBS for production data, Directorate of Food for stocks, and Bangladesh Bank for imports- which guide Government decisions. Efforts will be made to improve data exchange notably by setting up an inter-agency FNS data sharing mechanism as proposed in AoI 5.3.1. Novel and more reliable approaches to estimating private stocks also need to be devised as this is essential in the government's decisions with regards to procurement and foodgrain distribution.

2. Harness the potential of big data analytics to assess foodgrain availability, estimate required foodgrain imports, set procurement prices and amounts and plan PFDS

The potential of big data analytics will be harnessed (as proposed under AoI 5.3.2) to monitor all required variables needed to plan and make forecasts towards planning, procurement and PFDS. For

¹⁸³ The daily Bangladesh Food Situation Report, the Fortnightly Foodgrain Outlook and the Quarterly Food Situation Report.

example, simultaneous analysis of large sets of PFDS information can be carried out to support real-time decisions. Capacities – notably of FPMU, will be strengthened to apply modern ICT-based analysis and forecasting. Reliable forecasts will enable the use of the FAO's FPMA Tool that provides an advanced technical solution for dissemination and analysis of price information to monitor the food security situation and alerts against emerging food shortages. Public and private imports can help maintain required buffer stocks when domestic production is insufficient or procurement targets unmet. They can also help respond to sudden needs such as in the case of disasters. However, excess imports can have a negative impact on domestic production. Maintaining an appropriate balance between public interventions and international markets requires building strong analytical capabilities¹⁸⁴. State of the art methodologies to estimate foodgrain availability, and production will be adopted.

3. Review the methodology to set the procurement price and amounts

The way procurement prices and amounts are set will be reviewed, in light of recent experiences and other countries' successful practices. An effort will be made to understand the factors that may hinder successful procurement and what measures could be taken to alleviate them. For example, the additional costs faced by farmers to sell to the Government through procurement (e.g., the humidity gradient constraint to suit PFDS storage) should be adequately built in the procurement price so that production and post-production costs (e.g., transport to procurement centre) are covered by the set procurement price.

4. Develop an interministerial coordination mechanism to support decisions

An inter-ministerial coordination mechanism is to be developed for harmonizing the data and information on food grain production, prices, stocks and imports for a more efficient, integrated and analytical support to the PFDS.

5. Adapt PFDS to National Social Security Strategy (NSSS) priorities and changing approaches to social safety net programmes

The gradual shift towards cash-based social safety net programmes for greater efficiency needs to be acknowledged and taken into account in planning for the medium and longer terms in line with the NSSS and its PoA.

6. Plan to include nutritious foods under the PFDS

In response to the first wave of COVID-19 in 2020, as part of targeted safety net programmes, packages of fortified rice, rice flakes, lentils, molasses, fortified biscuits, and oil were distributed to bridge the nutrient gap of poorer sections of the population. Guidelines will be prepared to amend the PFDS permanently – learning from the COVID-19 experience, to include nutritious foods in addition to foodgrain to the basket distributed or sold at subsidized prices. The possibility of including dried fish will be explored. Which sections of the population it will support will need to be decided based on an assessment of the needs of and benefits to the recipients as well as the cost and complexity of operationalization.

Cross references

- NFNSP Aol 2.1.3; 5.3.1; 5.3.2
- NSSS PoA

¹⁸⁴ DAI. 2018. Food Reserves: Using food reserves to enhance food and nutrition security in developing countries Case Studies. October

AoI 4.1.2. Enhance the management of procurement, public food stocks and price stabilization activities and implement a nutrition-sensitive PFDS

Rationale

The role of the PFDS is to provide relief during emergency periods of natural disasters and targeted food distributions to alleviate chronic food insecurity. As described in AoI 4.1.1., the public procurement program is the major instrument for building foodgrain stocks for PFDS although it is also used to provide incentives to farmers by supporting prices (see also AoI 2.1.3). The Government has calculated the need for 1.05 million metric tons public foodgrain stock to made available at the beginning of each financial year in order to be able to handle PFDS activities. This is the equivalent of three months' distribution requirement of 0.6 million metric tons in addition to an emergency reserve of 0.45 million metric tons. Procurement targets and objectives are not always met as hindrances to smooth procurement implementation exist: procurement centers can be out of reach, the requirements with regards to moisture content of paddy are challenging for farmers to comply with, and centers are sometimes unwilling to accept small amounts from farmers¹⁸⁵. This AoI aims to make procurement and food distribution more efficient by providing information to the different stakeholders for enhanced decision-making, be it from the farmers or the consumers.

Action Agenda

1. Provide better information to farmers

Making foodgrain prices readily available to producers and consumers can help them make informed decision. Farmers will be able to decide whether to plant for the next season and whether to participate in the procurement drive. While DAM provides this information on a daily basis, digital display boards will be introduced in marketplaces for everyone to access live information. Other means of dissemination may be looked into, making use of ICTs (e.g., through mobile applications). In order to encourage farmer participation in the procurement drive, producers need to be educated on the required standards notably with regard to moisture content.

2. Increase the number of procurement centres

The coverage of the procurement is only 6 % of the total production, this needs to be expanded to provide price incentives to the producers. Decentralisation of the number of procurement centres may be looked into for enhanced farmer participation¹⁸⁶ although this should not lead to inefficiencies in the procurement system.¹⁸⁶

3. Expand the use of the digital applications developed for the monitoring of procurement

A Krishoker App has been piloted to relieve the complexity of existing manual procedures in the rice procurement system. Farmers apply to participate in the procurement drive and the computer system selects a fixed number of them through a lottery system. Besides, the Directorate of Food has introduced an inspection report management software, foodgrain movement programming software, and food database to help oversee the foodgrain procurement, distribution and stock management. The system also provides a facility to devise national procurement targets and determine procurement targets for individual farmers/rice mills accurately. The web-based foodgrain procurement management system in place allows to gauge the procurement status of paddy/rice across the country at any point in time. These initiatives will be rolled out.

¹⁸⁵ Krishi Gobeshona Foundation. 2019. Assessment of Foodgrain Procurement System in Bangladesh: Implications for Policy. Publication n.28

¹⁸⁶ *Ibid.*

4. Ensure suitable legislation and legislative mechanisms are in place for efficient foodgrain procurement

The Government will ensure that suitable legislative mechanisms are in place to discourage and prevent speculative hoarding of food and the creation of artificial shortages, and their enforcement will be monitored. Rice millers have been shown to sometimes benefit much more than farmers from procurement drives¹⁸⁷ and sometimes do not honour the agreement made with the Government to supply rice through the procurement programme!¹⁸⁷ Legislation may have to be reviewed to prevent such situations from occurring. To this effect, the Internal Food grain Procurement Act 2017 may be updated as required.

5. Enhance the monitoring of food distribution and management of stocks

The COVID-19 epidemic pointed to the acute need to closely monitor food distribution: an IFPRI survey uncovered vast leaks in the subsidized rice programs for the extremely poor -the Food Friendly Programme (FFP). Presently, several ICT-based management systems are used in the implementation of the PFDS, but they are not interlinked. A transparent surveillance system needs to be devised to monitor food distribution and stocks across the country. Public food stock management involves monitoring stock movement, stock rotation, and storage and transit losses. By further enhancing the existing digitalized system, leakage in the process of foodgrain storage and stock maintenance can be minimized.

A modern technology-based monitoring and evaluation (M&E) system is required to manage the activities of the PFDS under one umbrella to ensure the food security for poor and vulnerable people.

6. Develop systems to roll out nationally the distribution of non foodgrain foods through PFDS

Once plans have been made on the modalities to distribute nutritious foods as part of the PFDS basket (see AoI 4.1.1), systems will be developed to implement them. Different regional settings may have different requirements.

Cross references

- NFNSP AoI 2.1.3; 4.1.1

AoI 4.1.3. Ensure adequate storage of foodgrain, maintaining quality and prevent deterioration of stored foodstuffs in the PFDS

Rationale

Storage capacity for foodgrain is key both to accommodate the stocks needed to run the PFDS (see AoI 4.1.2) and also the foodgrain that the Government decides to procure at the beginning of the procurement season. Thus, grain storage capacity can constitute a constraint to a well-functioning PFDS and can limit the scope of a procurement drive needed for price support if the stocks are already high. Recent years have seen limited increase in this capacity and as of 2018/19, the capacity stood at 2.0 million metric tons¹⁸⁸. DG Food currently owns seven silos and 3,081 flat conventional godowns of which some are unusable as they are up to 60 years old. Many traditional godowns lack moisture and temperature control facilities which can impact the quality and shelf life of the stocks and imposes a fast turnover. Foodgrain stored in inadequate warehouses pose potential food safety risks to the PFDS beneficiaries. Annual losses incurred by PFDS via leakages in grain stocks and deterioration in grain

¹⁸⁷ Akhter, A. & M. Mehrab Bakhtiar. 2020. Boro rice procurement in Bangladesh: Implications for policy. Washington, DC: International Food Policy Research Institute (IFPRI).

¹⁸⁸ See Food Planning and Monitoring Unit (FPMU). 2020. *Op. cit.*

quality are estimated to range between 17 and 20% of the value of stocks.¹⁸⁹ Efforts are being made to expand this further: for example, the World Bank funded Modern Food Storage Facilities Project (2014-2023) plans to create another 535,500 metric tons of storage capacity with the construction of eight modern steel silos and modernise management to reduce foodgrain losses by 50%. It also plans to upgrade existing ones. The MoFood aims to reach a storage capacity of 3.7 million metric tons by the end of the 8FYP in 2025. Once plans are made to incorporate non-grain foods to the PFDS (see AoI 4.1.1), nutrient-sensitive storage adapted to these new commodities will also need to be made available.

Action Agenda

1. Refurbish and construct new warehouses for foodgrain storage

The 8FYP emphasizes the need to ensure quick responses and delivery to those vulnerable to hunger which entails improved storage capacity in specific areas of the country. The determination of the desirable stock size and therefore storage needed local will need to be based on such consideration.

2. Develop technology-based modern storage facilities (in line with 8FYP)

Given the scarcity of land in Bangladesh, the Government will focus on developing vertical storage to expand its capacity across the country. Attention will be given to intensive production zones and disaster-prone areas to boost response capacity. Modern technology will be used to maintain quality: mechanized bagging systems, weighing and handling equipment and enhanced drying methods while maintaining moisture content and temperature to ensure the quality of stored foodgrain.

3. Rollout and distribute stored foodgrain on a regular basis

Stock rotation is paramount to prevent quality loss and deterioration of the foodgrain. For this, monitoring at local and national level is essential and will require upgrading of the systems in place.

4. Develop storage for new foods to be included in the PFDS

AoI 4.1.1 proposes to include nutrient-dense foods to the PFDS for a more nutrition-sensitive system. In order to operationalize this, storage adapted to such food stuffs will need to be made available. These will need to stave off attacks by pests and disease and prevent oils from going rancid through frequent stock rotation. This will require research and feasibility studies to be carried out to allow a nationwide rollout.

Cross references

- NFNSP AoI 4.1.1; 4.1.2
- 8FYP 2020-2025

Strategy 4.2. Improve disaster preparedness, responses, rehabilitation and mitigation

Strategy 4.2 has four AoIs, covering actions before, during and after disasters. AoI 4.2.1 will support ex-ante measures to increase agricultural resilience to disasters. AoI 4.2.2 will ex-ante increase the resilience of poor families, especially farmers. AoI 4.2.3 will improve the operation of emergency shelters and services to protect life and well-being during disasters, especially of vulnerable groups. AoI 4.2.4 will strengthen FNS-related disaster responses, mitigation and rehabilitation during and after disasters.

¹⁸⁹ Kabir, R.I., Md. Yunus, T. Hossain & S. Rashi. 2019. Public food grain storage facilities in Bangladesh - An assessment of functionality, repair needs, and alternative usage. IFPRI Working Paper 002

AoI 4.2.1. Increase the resilience of agriculture systems through various mechanisms notably climate-smart technologies, adoption of stress-tolerant crop varieties and implementation of good agriculture, animal husbandry and fisheries practices for the production of healthy foods

Rationale

Resilience and adaptation in agriculture are crucial for ensuring the continuity of food production after disasters. Bangladesh's disaster profile may be changing under climate change in terms of disaster types, frequency, intensity, locations and predictability. A range of practices and technologies exist that are useful against high-to-medium frequency disasters occurring with low or medium intensity, as are common in Bangladesh. Examples include flood- and salt-tolerant crops, alternate wetting and drying, cropping systems better adapted to drought or flood, urea deep placement, and floating agriculture. However, adoption has not reached the scale needed, even though there exist policies to enable scale-up, documentation of experiences, and economic benefits have been demonstrated at up to four times the costs.¹⁹⁰ In addition, new technology and practices require investments in related infrastructure. For example, water infrastructure reduces risks from storm surges, cyclones, floods and droughts, which can further accelerate adoption of new practices and technologies. This AoI is linked to strengthening of research and innovations under AoI 1.1.1, extension services under AoI 1.1.2 and water management under AoI 1.1.3.

Action Agenda

1. Shortlist technologies and practices for upscaling specifically for each “disaster hotspot”

Many good technologies and practices are sitting on the “technology shelf” waiting to be scaled-up, and the Government will address this inertia by shortlisting technologies and practices for upscaling for each “disaster hotspot” identified in the BDP 2100, viz.: 1/ Coastal zone; 2/ Barind zone; 3/ *Haor* zone; 4/ Chattogram Hill Tracts; 5/ River Systems.¹⁹¹ Initially the Government will prioritise for scaling up a few technologies, varieties and practices most beneficial or scalable for each hotspot. EAS will be delivered by Government agencies and also in partnership with NGOs and DPs. Gradually, more technologies, varieties, and practices will be prioritised for each hotspot.

- In the coastal zone hotspot, the Government will emphasise salt- and stress- tolerant cultivars, and particularly varieties that tolerate combinations of submergence, waterlogging and salinity. The coastal zone has low productivity, especially in rabi crops, and has few high value crops. Extension services will further promote coastal aquaculture, such as through co-culture with crops and brackish-water fish. The guiding framework will be the 2012 Master Plan for Agricultural Development in the Southern Region of Bangladesh, and especially Chapter 6 and Chapter 7, which identify specific technologies, practices, actions and investment requirements.
- The Barind hotspot is prone to heat shocks, cold shocks, drought shocks and flood shocks. Problems include replenishment of wetlands, fish migration and spawning, groundwater depletion and excessive flushing of nutrients and pollutants. The emphasis here will be on sustainable water management, such as drip and sprinkler irrigation, alternate wetting and drying (AWD), reusing treated wastewater, wetland preservation – and ways of linking water pricing to usage. Lower water demanding varieties, especially winter pulses and oilseeds, and high temperature tolerant varieties of rice, wheat and maize, will be promoted.
- The *haor* hotspot faces degradation of natural resources, flash floods and poor market linkage. The emphasis here will be technologies and practices to reduce loss of land, livestock and other assets due to flood and erosion. Particularly relevant is floating-agriculture for vegetable production. Cold tolerant and short duration rice varieties will be emphasised. The guiding framework will be the 2012 Master Plan for Development of *Haor* Region.
- The Chattogram Hill Tracts faces soil erosion, siltation of waterbodies, low productivity, and limited diversification and agro-processing. Protected cultivation practices will be promoted

¹⁹⁰ FAO. 2019. Disaster Risk Reduction at Farm Level. Rome.

¹⁹¹ The BDP 2100 defined six disaster hotspots: 1/ Coastal zone (110 upazilas; 15% population); 2/ Barind zone (82 upazilas; 15% population); 3/ *Haor* zone (58 upazilas; 10% population); 4/ Chattogram Hill Tracts (25 upazilas; 1% population); 5/ River Systems (144 upazilas; 28% population) – and 6/ Urban zones (99 upazilas; 21% population).

that can be scaled-up for off-season cultivation of vegetables, spices and flowers. Technologies exist for expanded production and processing of cashew nut. Practices that increase the use of surface water will be promoted.

2. Adopt measures and infrastructure to enhance water management

Many of the new seeds, breeds, technologies and innovations need linkage to water management as an enabler for upscaling and adoption, particularly by small producers. Across the country rainwater harvesting and storage tanks will be promoted to relieve groundwater depletion. There is great scope to improve water harvesting and retention through the use of pools, dams, pits, retaining ridges, and increasing soil organic matter to heighten the water retention capacity of soils. Water use efficiency needs to be strengthened through sprinkler, drip and micro-irrigation. The Bangladesh Agricultural Development Corporation (BADC) and Barind Multipurpose Development Authority (BMDA) should better incentivize water saving irrigation devices (AoI 1.1.3).

3. Strengthen extension and advisory services for technologies and practices prioritized for different disaster hotspots

Strengthened EAS will target the prioritized technologies and practices in each “disaster hotspot”. This links to especially Activity 1 in AoI 1.1.2, which will map EAS needs based on agro-ecological niches (an 8FYP objective), draw new knowledge from agricultural research, and incorporate it into updated training for EAS staff.

Cross references

- NFNSP PoA AoI 1.1.1.; 1.1.2.; 1.1.3.
- BDP 2100
- 8FYP 2020-2025

AoI 4.2.2. Increase the disaster coping ability of poor farm families, support home-based farming especially through *Amar Bari Amar Khamar* (My Home My Farm), and protect poultry, livestock and other assets

Rationale

Investments to increase resilience, at household and community levels, help restart agricultural and other recovery after disasters. Whilst planning and resource allocation prioritised using poverty data remains important, a direct measure of vulnerability would be useful also. Homestead agriculture strengthens household resilience as it requires little land, women can contribute and it generates household cash, and can improve nutrition in the family. The Government’s *Amar Bari Amar Khamar* project, started in 2009, operates in 64 districts, and aimed to invest Taka 80102.7 million and cover 6 million households by 2020. Protecting livestock and assets is important for enhancing the disaster-coping ability of families. Few emergency shelters in disaster prone areas accommodate livestock. In many places killa, a raised earthen platform for livestock, have been effective. These structures are not capital intensive, although there can be issues with land availability, proximity to human emergency shelters and lack of maintenance. Infrastructure for basic services also needs to be made more resilient to disasters. The market for agriculture or disaster insurance needs development, and requires better assessments of risks for actuarial development. In the 8FYP the Government will form a technical team to undertake rigorous risk accounting, and determine the baseline, benchmarks and targets. Some of the infrastructure construction and maintenance under this initiative can be done through seasonal public works (AoI 4.3.2).

Action Agenda

1. Develop a policy-relevant vulnerability index

This action will develop a vulnerability index which will indicate the level of disaster risks across the country and this will be used to prioritise resources and monitor allocations. This index, for example, will augment data on poverty levels with data on past disasters, weather and climate change indicators – whilst remaining simple and transparent enough for it to be understood and to guide planning. A starting point, as mentioned in the 8FYP, will be the Delta Plan which shows that districts ranked as poorest are more exposed to natural disasters (risk category 1). Bangladesh has considerable data on past disasters, meteorology, environment and food security risks which could be used for this purpose.

2. Promote homestead agriculture

As part of broad-based support, the Government will promote homestead agriculture, especially through implementation of *Amar Bari Amar Khamar*. The quality and availability of gender-sensitive extension services will be enhanced to support homestead production (see AoI 1.1.2).

3. Protect household assets during disasters

Disasters destroy household assets which undermines the coping and recovery ability of families. The Government will invest in protecting livestock (with *killas* for example), household agricultural assets and farm machinery, such as by building and maintaining adequate shelters (see AoI 4.2.3). Families will be supported with practical measures such as to cover pond embankments with nets to retain fish if ponds overflow in disasters. Household and community-based storage facilities, like silos, can be increased for storing food, seeds and other commodities. Besides the Government-run silos discussed in Strategy 4.1, the Government has distributed 70-litre waterproof food-grade plastic silos to half a million households in 19 disaster-prone districts to store seeds and foods during disasters, and this will be continued and expanded¹⁹².

4. Invest in resilient infrastructure

The resilience of basic services, especially water, sanitation and healthcare, are crucial for household recovery. Facilities, such as medical centres and schools, will be strengthened, such as through elevation measures. More resilient water supply and sanitation infrastructure will be built.

5. Develop insurance schemes

There is a need to facilitate the development of insurance schemes via public–private–NGO cooperation for losses due to disasters and climate change by supporting needs assessments and providing technical assistance. Bangladesh has been working in this area, and there is a need to expand and concretise the efforts. This would include the ADB-funded Pilot on Weather Index-Based Crop Insurance, Swiss-funded Bangladesh Microinsurance Market Development Project 2017-2021, and the World Bank-funded Bangladesh Insurance Sector Development Project 2017-2022.

Cross references

- NFNSP PoA: AoI 1.1.2.; 4.2.3.; 4.3.2.; Strategy 4.1.
- 8FYP 2020-2025
- BDP 2100

¹⁹² Directorate General of Food. 2019. 5,00,000 HH Silos Distributed as of November. Modern Food Storage Facilities Project. Ministry of Food. Government of Bangladesh

AoI 4.2.3. Ensure operation of emergency shelters with nutritious and safe food, safe drinking water, sanitation and healthcare for disaster-affected people, especially for women, elderly, disabled people and children

Rationale

In 2019, 4318 per 100,000 population were affected by disasters and 0.316 per 100,000 died from disasters (SDG 13.1.1). For this SDG, the target is to reduce the number of persons affected by disaster to 1,500 per 100,000 population by 2030. Bangladesh has increased the number of emergency shelters, by rehabilitating existing shelters and building new ones. Multipurpose shelters have been constructed that double-up as schools, which ensures that the buildings are maintained. Bangladesh still needs to invest in the capacity, quality, operation and maintenance of shelters. Many of Bangladesh's emergency shelters need improved basic services, especially power, water and sanitation, and the infrastructure for basic services in the community needs to be made more resilient. Attention also needs to be given to ensure that appropriate quantities of safe drinking water are supplied on a sustainable basis. Indeed, of the people who used newly constructed shelters during the 2019 Fani cyclone, only 35% reported adequate availability of water, and only 47% reported adequate availability of toilets.¹⁹³ Coverage and outreach of emergency shelters need to be increased as well as facilities for basic needs during disasters, roads for quick access to shelters, and public awareness on the location of shelters. Women, elderly, disabled persons and children have special vulnerabilities during disasters. The National Women Development Policy 2011 calls for specific gendered design in disaster preparedness and responses and efforts must continue to this effect.

Action agenda

1. Invest in emergency shelters, disaster proofing infrastructure and early warning systems

The Government will investment more in emergency shelters and disaster proofing infrastructure. A key approach will be multipurpose buildings, based on the experience of the Multipurpose Disaster Shelters Project which is constructing 552 new shelters and rehabilitating 450 existing shelters in nine coastal districts. Facilities in existing shelters will be upgraded, especially for water, sanitation and healthcare; space for childcare; facilities for pregnant women; separate women's toilets; physical accessibility for the elderly and people with disabilities; protection of personal security for women and girls; and safe storage. The action links to AoI 4.2.2 to enhance the coping ability of families and communities by making infrastructure for basic services more resilient to disasters. Resilient and upgraded schools, clinics and other public buildings will serve as shelters.

2. Use PPPs to increase shelter capacity

Public-private partnership will be used to rapidly increase capacity. The 2011 Cyclone Shelter Construction, Maintenance and Management Policy says commercial buildings can be used where public shelters are lacking. A Memorandum of Understanding (MoU) between the government and the owner can be drawn up by the Upazila Nirbahi Officer. This option will be pursued more thoroughly, and if necessary, training will be provided to UNOs.

3. Enhance capacities and participation in shelter operations

This action will increase the training to GOs, NGO staff and volunteers on shelter operations. Also, the Guidelines for Disaster Shelter Management will be reviewed and strengthened. The participation of women and vulnerable groups will be promoted at all levels in decision-making. Needs of women, elderly, disabled persons and children will be better included in shelter design and operations.

¹⁹³ DPDS. 2019. Mid-term evaluation report - Multipurpose Disaster Shelter Project. LGED

Cross references

- NFNSP AoI 4.2.2.; 4.2.4.
- Cyclone Shelter Construction, Maintenance and Management Policy 2011
- National Women Development Policy 2011
- Guidelines for Disaster Shelter Management

AoI 4.2.4. Facilitate and coordinate disaster response, mitigation and rehabilitation through timely and strategic storage of public food stock, rapid distribution to disaster-affected people, and effective mobilization through various modalities including public-private partnerships

Rationale

The effectiveness of emergency relief depends on pre-positioning food, logistics and the capacity for rapid and inclusive distribution. PFDS storage could be better linked to data on disasters, such as hazard maps, spatial information, and household-level data. A lot of food – and rice in particular – is held by the private sector, and so its post-disaster mobilisation matters. Humanitarian logistics is “the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption to alleviate the suffering of vulnerable people.”¹⁹⁴ PPPs could draw on private sector logistics expertise and stimulate other innovations, such as using unmanned aerial vehicles (drones). Shock-responsive social protection can rapidly expand coverage, increase benefits and add extra types of assistance (“cash plus”). Social registers, digital payments and financial inclusion help for shock-responsive cash transfers. The COVID-19 pandemic underlined the need for greater shock responsiveness in social protection. Anticipatory or forecast-based social protection is delivered before disasters and better supports post-disaster recovery, because families are less harmed and productive assets can be protected¹⁹⁵. Disasters exacerbate nutritional risks, through increased morbidity and disrupted healthcare; worsened diets, especially access to fresh fruits, vegetables and/or animal source protein; inadequate water, hygiene and sanitation; and reduced breastfeeding and care for infants because mothers are stressed, malnourished and sick. Pregnant women, young children, the elderly and the sick are specially at risk. Technical capacities are low, preparedness is often weak, and coordination mechanisms need strengthening to address nutrition issues during emergencies.

Action Agenda

1. Strengthen policies and procedures for disaster management

The Government will strengthen its policies and procedures for disaster management, including the enactment of a legal framework to implement the Standing Orders on Disasters (8FYP action). This will strengthen targeting mechanisms in public food distribution in line with the NSSS, including attention to gender. Actions will be taken to strengthen union and upazila disaster management committees to be more effective before, during and after disasters. The 2012 Disaster Management Act, the 2015 National Disaster Management Policy, the 2019 Standing Orders on Disasters, and the 2016-2020 National Plan for Disaster Management provide the legal and policy framework, and set out the functions and duties of different actors.

2. Enhance pre-positioning of public food stocks

The Government will take actions to enhance the pre-positioning of public food stocks, so that it is in the right place at the right time, such as by improving the use of data, ICT and early warning methods,

¹⁹⁴ Logistics Cluster, 2006. Logistics Cluster Concept and Guidelines, World Food Programme (lead agency).

¹⁹⁵ For example, on 4 July 2020, a “pre-activation (or readiness)” response was triggered by a severe flood forecast in Bogura, Gaibandha, Kurigram, Jamalpur and Sirajgonj, which led immediately to vulnerable families being registered and funds being pre-positioned, which were released on 11 July, five days before the flood.

and by increasing safe storage capacity, especially in remote areas and at the community level. The Central Aid Management System (CAMS) software developed for food aid under the Department of Disaster Management (DDM), will be used to help in doing this.

3. Strengthen logistics in disasters

The Government will build on existing work to strengthen logistics in disasters. In 2019, Bangladesh started mapping national logistics capacities and stakeholders, and assessing logistics gaps in partnership with the Global Logistics Cluster of the Inter-Agency Standing Committee.¹⁹⁶ The purpose was to define a Logistic Preparedness Action Plan and to make operational a Preparedness and Response Platform that combines mapping, imagery, early warning, crowd-sourced information and logistics. This process will be developed and incorporated into the national disaster management system.

4. Encourage private sector involvement

Private sector involvement will be encouraged. Three broad areas stand out, but other areas could be developed. First is partnerships and agreements to mobilise foodgrains held by the private sector in each locality, to help stabilise post-disaster food markets. A second area is PPPs to improve humanitarian logistics. A third area is on the application of new technologies, such as ICT and drones.

5. Promote shock-responsive and anticipatory social protection

This action will promote the development of shock-responsive social protection and anticipatory social protection under the framework of the NSSS. It will build on Bangladesh's 2019 workshop on shock-responsive social protection¹⁹⁷, and on Bangladesh's 2020 experience of delivering forecast-based social protection before a major flood, which delivered cash and non-cash support in advance.

6. Enhance attention to nutrition in disaster preparedness and response

This action will ensure more attention to nutrition in disaster preparedness and response. Nutrition Coordination Committees should be part of disaster preparedness and responses. Nutrition-specific measures should be better integrated into disaster-responses to support continued breastfeeding during disasters, the quality and availability of complementary foods especially for 6-23-month-olds, micronutrient supplementation where suitable, and timely identification and appropriate treatment of severe malnutrition. Prevalence of nutritional deficiencies in populations should be considered in disaster preparedness, especially for distribution plans for fortified rice and micronutrient enriched biscuits in the disaster-hit areas. During the COVID-19 pandemic, nutrient-dense foods, such as pulses, nuts, edible oil and dried-fish (in some cases) were included in food distribution, and this would need to be incorporated as a key feature of disaster response going forward. Gender considerations and women's roles in food preparation, childcare and family hygiene are other critical concerns. Broader nutrition-sensitive measures, such as for water, sanitation and healthcare need greater emphasis. Both human and monitoring capacities need to be strengthened at all levels of the disaster planning and response frameworks.

Cross references

- 8FYP 2020-2025
- Disaster Management Act 2012
- National Disaster Management Policy 2015
- Standing Orders on Disasters 2019
- National Plan for Disaster Management 2016-2020

¹⁹⁶ IASC Logistics Cluster. 2019. Simulation-based Logistics Gap Analysis Workshop, IASC Logistics Cluster (2019) Quarterly Update July – September 2019 Bangladesh Preparedness

¹⁹⁷ GoB. 2019. Symposium on Adaptive Social Protection: Technical and Policy Considerations. MoMDR. 2-3 September 2019. Dhaka

Strategy 4.3. Strengthen social protection for poor and vulnerable groups, including disabled and displaced

Strategy 4.3 is composed of four AoIs to improve both the coverage and the composition of social protection to support access to food and nutrition “by all at all times”. AoI 4.3.1 will strengthen FNS *for all* by strengthening social protection in disadvantaged areas and for disadvantaged people. AoI 4.3.2 will strengthen FNS *at all times* by strengthening social protection during seasonal crises and food shortages. AoI 4.3.3 will improve nutrition by designing and implementing nutrition-sensitive social protection for nutritionally vulnerable people. AoI 4.3.4 will help integrate social protection with agricultural development, income generation, and micro-entrepreneurship to promote sustained FNS.

AoI 4.3.1. Strengthen social protection in disadvantaged areas and for disadvantaged groups

Rationale

Gaps in social protection coverage exist in Bangladesh due to locational disadvantages (especially, *chars*, *haors*, hill tracts, remote areas and urban slums), and socioeconomic disadvantages (especially, female-headed households, children, elderly, disabled people, displaced people and minorities). BBS estimated that 28% of households received social protection in 2016/17, compared to 25% in 2010.¹⁹⁸ For example, the Old Age Allowance covers only a quarter of the eligible, and the Widow, Deserted and Destitute Women Allowance covers only a tenth of eligible women.¹⁹⁹ Progressively increasing coverage is necessary for the Government’s goal to eradicate extreme poverty by 2031. There is also the need to progressively increase the size of benefits to adequately reflect needs. The National Social Security Strategy (NSSS) foresees in the longer-term the development of a National Social Insurance Scheme (NSIS). The COVID-19 pandemic underlined the urgency of strengthening urban social protection, especially those in informal sector work. According to the HIES 2016/17, just one-in-ten urban households received a social protection benefit. Targeting tools need to be improved by including FNS dimensions. The 8FYP proposes to develop multidimensional poverty measures for policy use. Electronic government-to-person (G2P) cash transfers can enhance inclusion of disadvantaged places (which are disaster-prone and less accessible) and inclusion of disadvantaged people (who can be less mobile and lack bank accounts). G2P would help the current problems of transfers arriving bunched together and requiring beneficiaries to travel to collect them.²⁰⁰

Action Agenda

1. Expand and consolidate programmes in line with NSSS

The Government will continue and expand existing social protection programmes for disadvantaged places (especially, *chars*, *haors*, hill tracts, remote areas and urban slums) and disadvantaged people (especially, female-headed households, children, elderly, disabled people, displaced people and minorities), and reform the programmes in line with the NSSS. This will include increasing the coverage of food and cash transfers for those unable to work. This complements AoI 4.3.4 for those able to work, which will strengthen links between social protection and productive activities.

2. Report social protection coverage and budget data by vulnerable places and by vulnerable groups

NSSS reforms aim to overhaul the entire social protection system, including consolidation of multiple programmes. The Government will ensure that access to food and nutrition is not compromised and

¹⁹⁸ These coverage figures do not consider whether households were poor. Targeting to the poor has shown little improvement between 2010 and 2016/17, and in both years the exclusion error was estimated as 67% (poor without social protection benefit) and the inclusion error was 20% (non-poor with social protection benefit). The estimates for 2010 are from Barkat A. et al. 2013. Improving the Targeting Effectiveness of Social Safety Nets in Bangladesh. FPMU, and for 2016-17 from Islam Khan, T. 2020. Efficiency of Delivering Social Protection Programmes in the North-West Region. Centre for Policy Dialogue. Dhaka.

¹⁹⁹ Maxwell Stamp. 2017. A Diagnostic Study on Old Age Allowance and Husband Deserted Destitute Women and Widows Allowance. According to the Ministry of Finance, coverage in 2020/21 will be 49 lakh beneficiaries (with budget 2940 crore taka) and 20 lakh beneficiaries (with budget 1230 crore taka), respectively.

²⁰⁰ For an example of the problems with the existing payment system, see World Bank. 2016. Allowances for the Financially Insolvent Disabled: Program Brief. Dhaka.

“lost” in the various NSSS reform processes, by generating and reporting social protection coverage and budget data in *chars, haors*, hill tracts, remote areas and urban slums, and for poor female-headed households, children, elderly, disabled people and displaced people. The data will be assembled from the various MIS, and reported in policy-useful intervals.

3. Include FNS indicators in NSSS management systems

FNS data will be incorporated into social protection management systems, such as for beneficiary selection. This will be part of broader NSSS reforms to create a Single Registry and a unified MIS. This action will focus on ensuring that when developing new management systems under NSSS reforms, FNS indicators such as the Integrated Food Security Phase Classification (IPC) Chronic Food Insecurity Analysis, are included. Related to this, AoI 4.2.2 will develop a Vulnerability Index to address disaster risks, rather than poverty per se, and this indicator could be included too.

4. Initiate Child Benefits Scheme

The Government is planning to launch a Child Benefit Scheme, and in 2018 established a Policy Guidance Unit under the Cabinet Division which will support its design and implementation. As an initial step, in the 8FYP the Government will start a cash transfer with 100% coverage for children 0 to 5 years old in Rangpur and Mymensingh divisions 60% coverage in Rajshahi and Khulna divisions, and 40% coverage in Dhaka, Chattogram, Sylhet and Barishal divisions. Coverage will be expanded, if feasible. Similar steps will be taken towards universalisation of the NSSS’s other core lifecycle cash transfer programmes.

5. Increase the use of G2P payments

The Government will increase the use of electronic G2P payments to beneficiaries. Pilots have been undertaken. Scale-up will be accelerated in the 8FYP. This action is connected to the 2020-24 National Financial Inclusion Strategy of Bangladesh, which aims to create a coordinated platform and leverage technology to include the excluded or vulnerable groups and sectors.

6. Develop a more comprehensive approach to urban social protection

A more comprehensive approach to urban social protection will be developed. In the near term, this will focus on substantially increasing the inadequate coverage in urban areas through existing social protection programmes, and in the longer term it will develop greater opportunities for contributory social security, which are necessary complements to the public-financed social protection programmes.

Cross references

- NFNSP PoA AoI 4.2.2.; 4.3.4.
- Action Plan for Implementation of NSSS of Bangladesh 2016-21
- 2020-24 National Financial Inclusion Strategy of Bangladesh
- 8FYP 2020-2025

AoI 4.3.2. Ensure safety nets for the poorest and nutritionally vulnerable, especially female-headed households, during periods of seasonal crises and food shortages

Rationale

Seasonality in Bangladesh is linked to rice production, although less strongly than previously. There are two lean seasons, with employment shortages, income drops and food price rises. The exact timings and durations can vary year to year, and Bangladesh’s northwest is widely recognised as afflicted, but seasonal stresses occur across the country in subsistence farming families. Fisherfolk need support in periods when fishing is banned. Urban seasonality was evidenced by the 2016-17 HIES that showed large dynamics through the year in urban poverty incidences ranging from 15.5% to 21.2%. Urban and rural sectors are linked by migration, remittances and other ways. Household nutrition can be seasonal due to seasonal access to water, sanitation, diversity of foods, and healthcare. Seasonal nutritional dynamics can differ in timing from the wider lean seasons. The 2014 (2015) State of Food Security and

Nutrition in Bangladesh found that food and nutrition insecurity peaked in January-April in the northwest, coastal belt and northern *chars*, but not in the eastern hills, *haor* and Padma *chars*, where it peaked in September-December. Women and adolescent girls tended to be first to cut food consumption to cope with seasonal shortages. Complicating matters is that climate change might be altering Bangladesh's seasonal weather patterns: data from over 50 years suggest that Bangladesh's traditional six seasons might be merging into four seasons. Compared to natural disasters, seasonality is relatively slower to onset, protracted and recurrent, and hence more predictable. This means that rather than an ex-post shock-responsive social protection system, such as for disasters, the need is for an ex-ante adaptive system that can adjust to year-to-year needs.

Action Agenda

1. Expand coverage of seasonal employment programmes in line with NSSS

Seasonal employment programmes will be needed for the whole period of this PoA because the agricultural production cycle, particularly of rice, will continue to influence Bangladesh's economy. The Employment Generation Program for the Poorest (EGPP), Food for Work (FFW), Work for Money (WFM) and Test Relief (TR) will be continued. The four programmes will cover 74 lakh beneficiaries with a budget of 5723 crore taka in 2020/21, representing 6% of the social safety nets budget or 1% of government spending or 0.18% of GDP, and efforts will be made to increase coverage of the affected population in coming years.²⁰¹ Greater management attention will be paid to ensure that programme implementation coincides fully with the timing of lean seasons, and that programmes adjust better to year-to-year variations in seasons. The four programmes are implemented by the Ministry of Disaster Management and Relief (MoDMR) and possibilities for consolidation will be explored under the NSSS to harmonise and strengthen targeting, administration, MIS and digital payments. MoDMR will explore how the public works activities in these programmes could be focused on reducing disasters risks and seasonality, because these will account for most of the remaining poverty in Bangladesh after economic growth lifts more and more people out of poverty in the next decade. Cash and food transfer programmes will be enhanced and expanded for fisherfolk especially during the banned period of fishing.

2. Continue direct food transfers and subsidized foods to vulnerable groups

Direct food transfers will be continued to vulnerable groups who cannot work during seasonal crises. The Government will continue the Food Friendly Programme (Khaddya Bandhob Karmosuchi), which provides subsidised rice to extreme poor families twice a year during the pre-harvest months of March, April, September, October and November. The Government's OMS in urban areas of subsidised foodgrains and other foods will be continued and expanded to meet the increased demand due to continued urbanisation and increased numbers of informal sector workers. Moreover, to be more responsive to seasonality and other temporal dynamics, OMS operations will better incorporate the Government's urban food price monitoring data.

3. Invest in surveillance of seasonality in nutrition

The Government will invest in surveillance and knowledge to better assess seasonality in nutrition, with the objective of developing practical measures and programmes. Big data might play some role (see AoI 5.3.2). Priority will be given to nutritional seasonality in the "first 1000 days" because for this age-group short seasonal stresses can be very impactful. Other prioritised vulnerable groups will be adolescent girls, pregnant women and lactating mothers. Rural and peri-urban homestead gardens, and urban rooftop gardens (AoI 1.2.3), will be promoted to support seasonal diversity of diets. An expanded coverage in urban areas of complementary nutrition measures is needed. These interventions will be supported by stronger integration of nutrition objectives and activities into disaster response (AoI 4.2.4) and social protection programmes (AoI 4.3.3).

²⁰¹ Ministry of Finance. 2020. Social Safety Net: 2019-20 & 2020-21 Financial Year, Government of Bangladesh

Cross references

- NFNSP PoA AoI 1.2.3.; 4.2.4.; 4.3.3.; 5.3.2.
- Action Plan for Implementation of NSSS of Bangladesh

AoI 4.3.3: Develop and implement nutrition-sensitive social protection programs, including food fortification, nutrition education, and behaviour change communication

Rationale

Social protection can positively impact nutrition by improving dietary quality, increasing income and improving access to health services. It can also influence practices related to care, sanitation and education. Also, the Vulnerable Group Development (VGD), Vulnerable Group Feeding (VGF) and the FFP offer opportunities to support nutrition by including fortified foods. In 2020, in the midst of the Covid-19 pandemic, the OMS programme included low-priced rice fortified with six micronutrients, namely Vitamin A, Vitamin B1, Vitamin B12, Folic Acid, Iron and Zinc. In this same period more diverse foods, rich in nutrients, were added to the food baskets distributed to the needy. Combining social protection transfers with nutrition education and NBCC substantially improves children's nutritional status.²⁰² MoWCA piloted the Investment Component for Vulnerable Group Development (ICVGD) program for destitute women, which adds a cash grant for investment, fortified rice distribution, and nutrition BCC to existing VGD activities and lessons need to be learnt from this experience. The actions proposed under this AoI seek to render existing social protection programmes more nutrition-sensitive and to reach the nutritionally vulnerable.

Action Agenda

1. Scale up the inclusion of fortified rice in the FFP and OMS, diversify the food distributed in social protection programmes, and monitor impacts on nutrition

The FFP sells subsidized rice during March-April and September–November, including fortified rice since 2016, and this will be expanded. Inclusion of fortified rice in OMS was formalized by the MoFood in August 2020, and this will continue beyond the COVID-19 crisis. In addition, a wider range of nutritious foods will be introduced in the food basket distributed or sold at subsidized prices to vulnerable people. The impact on nutrition of fortified rice in FFP and OMS, and of diversifying foods in social protection transfer programmes, will be monitored.

2. Enhance social protection programmes for nutritionally vulnerable women of reproductive age and children during the first 1000 days

Focusing on women of reproductive age and children during the first 1000 days (from pregnancy to their second birthday) is the most efficient way to break the inter-generational cycle of malnutrition and poverty by ensuring the adequate growth and mental development of children. Led by the MoHFW and the Ministry of Women and Children's Affairs, services and interventions should be expanded with supplementary nutritional food according to the dietary guidelines of Bangladesh. In addition, maternity allowances to poor pregnant women will be expanded to support access to nutritious food.

3. Enhance and integrate NBCC into social protection

Based on the ICVGD and other experiences in Bangladesh and abroad, appropriate contextualized NBCC focusing on standardized and correct information on dietary knowledge, healthy cooking methods, nutrient dense-recipes, dietary diversity, appropriate Infant and Young Child Feeding (IYCF) practices, food handling, preservation, storage, food safety issues and WASH should be developed and disseminated (see Strategy 3.2). NBCC should focus on enhancing dietary and nutrition knowledge for all, regardless of economic and social status, age or gender.

²⁰² Akhter, A., J.F. Hoddinott & S. Roy. 2019. Food transfers, cash transfers, behavior change communication and child nutrition: Evidence from Bangladesh. IFPRI Discussion Paper 1868. Washington, DC: International Food Policy Research Institute

4. Expand the School Feeding Programmes in Poverty Prone Areas

The School Feeding Programme (SFP) in Poverty Prone Areas which began in 2013 provides school children in selected areas biscuits fortified with vitamins and minerals (such as innovated by the National Agricultural Technology Program - Phase II Project) and hot meals using locally sourced vegetables, lentils and micronutrient-fortified rice and oil. At present the SFP coverage reaches over 3 million school children in 15,700 schools in 93 upazilas of 29 districts of Bangladesh. Students' attendance has grown in schools where cooked meals and biscuits are being served. The SFPs will be expanded and used as a medium to foster good food habits and healthy dietary practices among children. The National School Meal Policy 2019 has undertaken the universalization of the SFP through a phased approach by the fiscal year of 2023/24.

Cross references

- NFNSP AOI 4.2.1 and Strategy 3.2.

AoI 4.3.4. Ensure proper coordination and co-operation to integrate social protection with agricultural development, income generation, and micro-entrepreneurship development

Rationale

Social protection integrated with agriculture, income generation, and micro-entrepreneurship is often called "productive social protection". It helps strengthen the inclusion of the poor into GDP growth, which is crucial because the 8FYP estimates that even economic growth of 8 or 9% could be insufficient for the Government's target to eradicate extreme poverty by 2031. Moreover, the PP 2041 targets full employment by 2031, which will need the creation of two million jobs annually. Productive social protection promotes resilience to cope with risks and income volatility, and reduces reliance on low-productivity and insecure informal sector work. Productive social protection requires wide-ranging enablers. The Government's My Village, My Town Programme has great potential to help by extending to every village the facilities of modern towns, but coordination will be needed to ensure that productive social protection programmes best exploit the new opportunities. There is need to modernise and strengthen the training and skills formation component in most productive social protection programmes, because not only does the quality tend to be low, but also the training tends to be on a limited range of traditional activities and skills. Further efforts are needed to eliminate gender gaps. Around one-third of the population is aged 16-24 years. Productive social protection should be designed and implemented better to meet the needs and promote careers of young people. The school-to-work transition is very difficult and causes many to become locked into low productivity, survival activities.

Action Agenda

1. Expand and consolidate productive social protection in line with the NSSS

This action will support programmes that integrate social protection into productive activities. Existing programmes will be re/designed and modernised towards productive activities that stimulate agricultural diversification, agro-processing and structural transformation. Programmes will be scaled up to support the Government's inclusive growth strategy. Programmes will be reformed and consolidated in line with the NSSS, including to improve the selection of beneficiaries, management systems and the content of programmes, and this will be done through the coordination of the Livelihoods Cluster of the NSSS. Microfinance will need to play a role.

2. Ensure productive social protection are coordinated with My Village, My Town

The Government has plans to stimulate rural transformation through investments under the My Village, My Town programme, involving 14 ministries and 20 agencies, which will extend modern civic amenities to every village. Since this is a multisectoral, multi-ministerial investment and development programme, coordination and cooperation from planning to implementation will be crucial to ensure that productive social protection programmes make the best of the new opportunities, and this action will ensure this. It is intended that by 2030 all upazilas will have a master plan. My Village, My Town

aims to create employment through agriculture-related and non-agricultural small-scale village manufacturing workshops and rural growth centres.

3. Improve the quality of training, skills development and advice in productive social protection programmes

This action will ensure the relevant parts of the 2011 National Skills Development Policy, such as certification, quality assurance and training of trainers, are identified and implemented to redesign and modernise the training and skills components of productive social protection programmes. The purpose will be to improve the quality of training, skill development and advice. Redesigned training will need to be relevant to the needs of women and young people. Different vocational training programmes will be consolidated, standardised and scaled up. This will need stronger coordination and cooperation between productive social protection programmes and various training centres, NGOs and TVET institutes (see AoI 2.4.1). Greater collaboration with private training services will be encouraged, and this can encourage greater links to private sector employers.

4. Scale-up productive social protection for women and other excluded groups

The Government will scale-up productive social protection programmes that are designed to address gender barriers that hamper women's labour force participation, particularly in agriculture and related employment. The NSSS plans to consolidate the Vulnerable Group Development and the Widow, Deserted and Destitute Women Allowance into a Vulnerable Women's Benefit (VWB) that will be more tuned to income-generation – and when consolidating the programmes, attention will be paid to ensure that unconditional food and cash transfers will be maintained for vulnerable women who cannot work. Productive social protection programmes will be expanded to other excluded groups, such as those in remote areas, fisherfolk and minorities.

5. Adapt social protection programmes to young people

This action will design productive social protection programmes to better suit the needs and careers of young people. Apart from vocational training, poor and vulnerable youth need specially designed on-the-job experience and life-skills. Labour Force Surveys estimated youth not in education, employment or training (NEET) increased from 25% in 2013 to 30% in 2017. The National Youth Policy 2017 should guide interventions, but is not strongly implemented in productive social protection programmes. Initially interventions will involve promoting agribusiness and agri-entrepreneurship, especially given the changing characteristics in the agriculture sector in the coming decade, such as greater mechanisation and less access to land (see AoI 2.4.1). The National Service Programme for young people with schooling, covering one lakh beneficiaries in 2020/21, will be improved, better linked to job-market opportunities, and scaled up.

Cross references

- NFNSP PoA AoI 2.4.1.
- National Youth Policy 2017
- National Skills Development Policy 2011
- Action Plan for Implementation of NSSS of Bangladesh

6. Areas of intervention to achieve Objective 5 of the PoA

Objective 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation

Strategy 5.1. Improve food safety, quality control, and awareness of food safety and hygiene

AoI 5.1.1. Ensure conformity and compliance of food safety policies (laws, standards and regulations)

Rationale

The Constitution has enshrined the right to food as a fundamental principle of state policy in Article 15, and the food safety requirements must be ensured through enactment of appropriate laws. The Safe Food Act 2013 designates the BFSA with the responsibility, through coordination, for regulating and monitoring food manufacture, import, processing, storage, distribution, and marketing to assure the safety, wholesomeness and authenticity of foods. Amidst the complexity and wide range of acts, laws and regulations of various categories of food products that cut across the functions of various sectors, the Safe Food Act needs to be implemented. In 2020, the Bangladesh Agricultural Good Practices Policy was approved. Food safety standards and regulations cover not only food safety, but also issues such as plant and animal health, product quality, environmental protection, and social welfare. Food safety can be assured through an effective regulatory framework that prevents contamination during production, processing, preparation, and marketing in accordance with scientifically established food safety and quality standards. Despite multiple ministries and agencies having mandates on food safety matters, they do not have specific budgetary provisions earmarked for operationalisation of their food safety related activities. At the moment, there are central testing laboratories in the country but many lack updated facilities, have inadequate coordination and compliance of quality and technical standards set out by the BSTI. With regard to export, there is need to comply with options for benchmarking national GAP codes in Asian developing countries to internationally accepted standards, such as the Codex and EUREPGAP, and more generally respect international food safety and environmental requirements. The number of laboratories with proper international accreditation are few. In terms of trade, the current Import Policy Order needs to emphasize reform of the inspection system to create a functional, competent inspection authority overseeing food safety for imported foods.

Action Agenda

1. Harmonise laws, rules, regulations and standards, agree on a common strategy and define roles

Harmonisation of the many laws, rules, regulations and standards across ministries will improve the food safety framework in the country. Indeed, overlapping of regulatory bodies and lack of coordination among ministries creates a haphazard and confusing situation, diminishing the goal of food safety²⁰³. Fifteen ministries are involved in food safety and quality control, while ten ministries are directly involved in food inspection and enforcement²⁰⁴. The role of the BFSA which collaborates with government agencies such as the BSTI in the MoInd, MoF, Plant Quarantine Wing, DAE, MoA and Bangladesh Small and Cottage Industries Corporation (BSCIC) to harmonise food safety standards in compliance with WTO requirements must also be better defined. Harmonising standards will improve

²⁰³ USDA. 2019. Bangladesh Food and Agricultural Import Regulations and Standards Report FAIRS Annual Country Report. GAIN Report Number: BG 1812

²⁰⁴ *Ibid.*

the government's role in food safety oversight. The BFSA Technical Committee will need to determine the food safety and nutrition standards and elaborate steps in improving coordination between ministries to implement a food safety strategy with clearly defined roles and responsibilities of different agencies/ministries. The food safety strategy developed by BFSA is expected to serve the purpose. Further, an assessment of resources and needs, ahead of the development of action plans will be conducted. Guidelines for the implementation of quarantine and import policy orders to ensure the safety of imported foods are also required. Legal provision of up to life-term imprisonment against the offense of adulterating food and medicinal products will be introduced.

2. Develop guidelines for food safety inspections

BFSA needs to develop strict guidelines for food safety inspections and ensure strict compliance of the food inspection guidelines and manuals. Port teams should be trained to sample and then send the samples for testing in accredited laboratories which should ideally be located at the ports. The guidelines should include all the elements of inspection and certification systems for the food production, processing, preparation, marketing and imported foods. Legislation should clearly establish the authorities required to implement control over non-compliant food (both local and imported). These include the power to suspend or revoke authorizations, to seize and detain non-compliant products, to destroy non-compliant food, to levy administrative fines or penalties, to prosecute and seek court-imposed penalties. Existing initiatives -such as the Global Food Safety Initiative (GFSI)-approved third party assurance program introduced by USDA which is an overarching body that provides globally recognised product certification for food safety, which is required by some companies for their suppliers, will be built upon to facilitate trade and export.

3. Strengthen existing capacities and build new ones

Comprehensive analyst training programmes are required along with the introduction of standardized methods of analysis and the application of standardized laboratory quality assurance program. With the increased demand of safe food, Bangladesh Agricultural University (BAU) has launched a diploma course in Food Safety. The concerned authority needs to utilise the undergraduates as future food analysts and inspectors. The current manpower should be provided with a refresher training and efforts should be made to recruit more skilled manpower. An expanded network of duly accredited laboratories for food safety will be developed and services expanded. BSTI's capacities also need to be enhanced.

4. Strengthen the capacity of the Bangladesh Accreditation Board

The capacity of BAB to accredit inspection and certification bodies based on international standards (ISO 17020 and ISO 1702) must be strengthened, including by supporting its application for membership to the International Accreditation Forum. Its ability to accredit independent, third party inspection and certification systems will be promoted to help expand the certification and inspection ecosystem in Bangladesh beyond government owned institutions.

AoI 5.1.2. Develop, improve, and establish traceability mechanisms and enforce regulatory frameworks to control food hazards within the food supply chain

Rationale

Food can be contaminated at any point of the food supply chain, from production to consumption therefore food safety is critical in both domestic and international trade. With the rise in consumer's expectations of safe and healthy food, all the participants in the food supply chain need to ensure that effective practices are in place to ensure food safety. Traceability or product tracing is defined by the Codex Alimentarius Commission as "the ability to follow the movement of a food through specified stage(s) of production, processing and distribution". Traceability within food control systems is applied

as a tool to control food hazards, provide reliable product information, and guarantee product authenticity. To this end, traceability processes and regulatory frameworks are vitally important for food safety as well as operational efficiency of the food supply chain. In Bangladesh, there is almost no food traceability²⁰⁵, and food safety risks are high given the inefficiencies in food transportation, handling, and storage. However, with increased engagement of private sector partnerships, multinational food companies are applying tracking processes as part of product development. With the advancement of digital tools and systems for tracking progress of policy issues in Bangladesh, establishing e-traceability systems for food safety would also be a way forward. Initiatives started in 2009-10 for the shrimp sector on electronic traceability should be built upon. As part of the food safety control system, it is also important to engage in public dialogue for effective and efficient control based on scientific evidence and good governance principles. BFSA needs to integrate robust traceability studies as part of its regulatory mechanisms to inform the system and put in place measures to improve the FVC.

Action Agenda

1. Develop and strengthen the national food safety control system (in line with NPAN2 Key Strategy 6.2.5. and 6.5.8)

The National Food Safety Management Advisory Council will support BFSA to develop/strengthen the national food safety control system. In applying traceability across all or specified stages of the food chain, the code of best practices should be implemented across all movement points from production to distribution. A coding system of farms is needed, and the farms should be brought under a national registration system. The National Food Recall System will empower the authority to enforce and oversee the provisions associated with food recall and traceability. Zoning of shrimp farms, registration of horticulture zones, livestock identification and registration system as notable examples will be undertaken by the responsible sectors. It will also exercise legal action against producers, packers, traders, manufacturers, processors, retail stores and food service operators, who are in violation of these provisions, and help increase accountability among the food business operators. Blockchain will be explored as a means to ensuring traceability: blockchain is a decentralised, distributed and public digital ledger that is used to record transactions and does not allow any alterations without the agreement and active involvement of everyone in the network. Transactions can be viewed simultaneously and in real-time, with both greater security and transparency. Barriers and challenges across the system will need to be addressed, with regard to the availability of high-speed internet services across the value chain, capacity to use the technology and adherence to policies and regulatory frameworks.

2. Prepare strategy, guidelines and Standard Operating Procedures (in line with NPAN2 Key Strategy 6.5.8)

A National Food Safety Strategy on food safety will need to be elaborated and implemented and a National Plan of Action on food safety developed. BFSA will need to prepare manuals, guidelines, and SOPs in consultation with different sectors that can be utilised by the grower, manufacturer, retailer, exporters and other involved stakeholders. To build a robust food safety system, the authorities need to assess the hazards and suggest preventative actions. To develop a manual for GAP, GMP, GAqP and GHP, the authority needs to conduct a systematic review (hazard analysis) of the production environment and all inputs for the purpose of identifying any hazard that may present a potential risk for contamination of the food. Once the programmes such as GAP, GMP and GHP work effectively within a food operation, the HACCP can be applied. Legal frameworks should be sufficiently precise

²⁰⁵ In 2009 for example, a paper-based traceability system was developed with about 200,000 *gher* farmers in Bagerhat district registered by DoF with the support of UNIDO. Frequent *gher* ownership changes rendered traceability extremely challenging and called for a digital system. (Islam, M.R., M.M. Rahman & M.M. Haque. 2017. Strength and weakness of existing traceability system of seafood production in Bangladesh. *Progressive Agriculture* 28(2))

to clarify roles and responsibilities, and, at the same time, sufficiently flexible to enable adaptation to scientific development or new findings, or changing programme requirements (see AoI 5.1.1.).

3. Build an ecosystem of accredited independent certification and inspection agencies

An ecosystem of accredited independent certification and inspection agencies is recognized as an important element in food control and will need to be built. Having GAP certification facilities in Bangladesh is a prerequisite for the food safety system. BFSA could also coordinate with the private enterprises that are setting up GAP certification services, which will need to be accredited by BAB or other international accreditation bodies. Accredited third party management system certification bodies are also relied on to conduct food safety audits and issue certificate of food facilities. However, there is an urgent need for BAB to provide guidelines and procedures on conformity assessment activities, such as testing, inspection and certification that can operate to international standards. The network of mobile courts should be scaled up across the country to continue identifying food safety violations as well as indiscriminate or illegal use of pesticides and antibiotics.

4. Strengthen linkages with INFOSAN

In order to bolster the country's capacity to manage food safety emergencies, BFSA should also strengthen its linkages with International Food Safety Authority Network (INFOSAN). Linkages must also be developed between Codex and INFOSAN focal points at national and global level (see NPAN2 Strategy 6.5.8). INFOSAN is an important platform for exchange of information in case of food safety crisis and for food sharing data on emerging or routine food safety issues. Through INFOSAN, WHO, in collaboration with FAO promotes cross sectoral collaborations and information sharing during food safety emergencies, as in the COVID-19 situation where a focus on new technologies and communications, and on handwashing and hygienic practices would be the key for the future of food safety. The emergency focal point for INFOSAN serves as a critical link in sharing information with the INFOSAN Secretariat and other members on food safety issues that may be relevant at the international level, promoting partnership, collaborations and dissemination of relevant information and guidance within the national agencies and the country.

5. Strengthen product certification to ensure quality and safety

Although export-oriented large-scale food processing industries have quality and safety certification (GMP, GHP, HACCP, ISO 22000:2005, etc.), certified farms for primary producers (e.g. GAP and the Association of Southeast Asian Nations Good Aquaculture Practices (ASEAN GAqP) are almost absent in Bangladesh. Steps will be taken to bring primary producers and MSMEs under various certification schemes to assure product quality and safety for the domestic and export markets. The Bangladesh Agricultural Certification Body established to provide Bangladesh GAP Certificate will need to be made functional.

6. Provide training and enable implementation of food safety practices (in line with NPAN2 Key Strategy 6.2.5. and 6.5.8)

Training on GAP, GAqP, GHP and GMP will be provided to concerned actors along the value chain. HACCP and personnel hygiene practices must also be effectively implemented at all levels of food production and in all processing units. Nationwide training and capacity building in food safety and hygienic food handling should be undertaken for street food vendors and urban food producers drawing upon successful lessons from within Bangladesh²⁰⁶, adapting from updated guidelines from South East Asian countries²⁰⁷ and also including COVID-19 considerations²⁰⁸. This should be in compliance with the Codex General Principles of Food Hygiene and GMP to allow the producer to operate within

²⁰⁶ For example FAO's "Improving Food Safety in Bangladesh" programme, in partnership with the Khulna City Corporation, 2013

²⁰⁷ WHO/ FAO/ Mahidol University.2012. Regional Consultation on Safe Street Foods

²⁰⁸ Zhang, J. (2020) Asia's Street Food Scene Is Changing Amid Pandemic. Eater. 23 December

environmental conditions favourable to the production of safe food. Primary producers and MSMEs require not only technical support to adopt these improved practices throughout the supply chain to assure product quality and safety for domestic and export purposes, but also for financial and livelihood gains. Nationwide training should be undertaken for street food vendors.

Cross references

- NPAN Key Action Areas 6.2.5.: Promoting/Enforcing measures to ensure regulations of production/ processing/marketing/ preservation of food items Increasing knowledge and improving practices to ensure food safety along the value chain; 6.5.8. Key Action Areas: Strengthening the enforcement of Food Safety Act 2013

AoI 5.1.3 Develop and promote education and consumer awareness on food safety

Rationale

Every year, one in ten people in the world fall ill and 420,000 die after eating food contaminated by bacteria, viruses, parasites or chemical substances. Food contamination and food adulteration are significant problems in Bangladesh. They occur due to the absence of a satisfactory food regulatory and control system and the lack of education and awareness among food producers, food handlers and consumers. Heavy metals and trace elements accumulate in bio systems through irrigation water and soils contaminated by industrial discharge, fertiliser use, sewage and waste, eventually entering the food chain. Chemical contamination also occurs due to the deliberate mixing of adulterants to food. Bacterial contamination is common during storage, transportation and processing. Those handling food are often unaware of the existence of food-borne disease and of how cross-contamination can occur. In addition to jeopardising the safety of food, inadequate practices can also weaken its nutritional value. The issue of food safety needs particular attention with respect to the FNS of more vulnerable people. Indeed, where food safety hazards are detected, in the absence of adequate food standards and enforcement, suppliers may divert contaminated food to unaware, poorer buyers²⁰⁹. These issues have now been mainstreamed in policy, notably in the Bangladesh Food Safety Act which now needs to be implemented with planning, including budgetary allocations. The Health Population and Nutrition Sector Development Plan identifies food safety as one of 20 components in its operational plan for NNS, and outlines actions for strengthening laboratories, surveillance and enhancing public awareness. In 2018, a telephone helpline (333) was opened by the GoB which amongst other things, allows consumers to report food adulteration. Awareness raising on the importance of food safety must continue, tailoring the messages to groups as different as household cooks, children, men who often take care of the food shopping and women, given their multiple roles in the household-preparing the food, distributing it, feeding children, storing it, etc.

Action Agenda

1. Develop an extensive field campaign (in line with NPAN2 Key Strategy 6.2.5. and 6.5.8)

BFSA needs to develop an extensive field campaign focusing on safer food, clean food preparation, handwashing and basics of food safety (in line with AoI 3.2.2). Comprehensive packages of food safety awareness materials already exist (prepared by FAO and WHO for example) and may be readily used. Food safety will be included as a part of regular school curriculum. One of the most effective ways to enhance consumer awareness is through building BCC campaigns delivered through platforms such as mass media, print media, radio and other public forums. The campaign should include safe animal source foods handling and preparation, safe storage, contamination, adulteration and cleanliness. The private sector can be a key partner in delivering effective messaging on safe food through the advertising

²⁰⁹ FAO. 2019. The State of Food and Agriculture 2019. Moving forward on food loss and waste reduction. Rome

it uses in its sales strategy. Civil society organisations (CSOs) such as the BSAFE Foundation whose mission is to “Educate people to develop a safe food culture across the value chain ‘from Farm to Plate’” should also be closely involved. Food safety activities being promoted through national events such as the National Nutrition Week, the Nutrition Olympiad, World Food Day, the World Breastfeeding Week, the National Food Safety Day, World Food Safety Day, the National Vegetable Fair, the National Fruit Fair, World Milk Day and World Egg Day must be strengthened, and also implemented at sub national levels using digital platforms. Campaigns such as Food Safety Week will be utilised to enhance consumer awareness and the public’s interest in issues of food safety emphasising key preventative measures. BFSAs’ restaurants’ gradation according to an international system to indicate their quality based on hygiene and food safety regulation will be expanded and promoted so that consumers are able to make informed choices. This should also work as an incentive for restaurants to comply with BFSAs standards.

2. Support and strengthen consumer forums

Forums like CAB and BFSN which can serve as a platform to raise awareness and involve the general public towards food safety initiatives will be promoted and strengthened. Such forums can help establish a food safety culture and strengthen food safety advocacy among the community. BFSN needs to be rejuvenated as an advocacy group for food safety. At the subnational levels, “healthy market place” and “healthy street food vending” initiatives were supported through various food safety projects. Khulna and Barishal districts had emerged as “safe food upazilas”. Such food safety initiatives as well as safe food clusters at the subnational levels will be reactivated in collaboration with BFSAs and BFSNs.

3. Carry out risk assessment and risk communication

The BFSAs should form a Risk Assessment Unit that can carry out the function of risk assessment and risk communication. The committee can provide a framework which will collect, process and analyse food safety risks for products, processes and activities. The quality and safety of food depends on responsible action by all involved at all stages in the food chain, including consumers. Consumers require access to adequate information about potential hazards and appropriate precautions to be taken in the final preparation and serving of food. In addition, consumers need to be aware of and understand food safety control measures implemented by their government in the interest of consumers’ health. Capacity strengthening experts at national and subnational levels in the detection and assessment of food adulteration, contamination and dietary risk surveillance also requires urgent attention.

Cross references

- NFNSP PoA AoIs 3.2.2.
- NPAN Key Action Area 6.2.5.: Mainstreaming food safety, water, sanitation & hygiene practices in sectoral SBCC; 6.5.8. Key Action Areas: Enhancing public awareness on food safety.

Strategy 5.2. Reduce food losses and waste

The 2030 Sustainable Development Agenda emphasises the importance and critical role of sustainable production and consumption systems that contribute to food security and sustainability of natural resources. SDG 12 aims to ensure “sustainable consumption and production patterns”, and one of its targets (SDG 12.3) calls for halving rates of FLW. This in turn would contribute to meeting a number of other SDGs, such as those on hunger (SDG2), poverty (SDG1), and health (SDG3). The Government has set several targets to meet the SDG12 commitments defined and prioritised in national medium- and long-term development strategies and vision. This Strategy is set to contribute to the goal of NFNSP and to the achievement of FNS-relevant SDG targets, including target 12.3 that aims to “halve the per

capita global food waste at the retail and consumer level, and reduce food losses along production and supply chains including post-harvest losses by 2030”.

AoI 5.2.1 Minimise on-farm food losses

Rationale

Food loss is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retail, food service providers and consumers²¹⁰. On-farm food losses can occur before, during or after harvesting. In some instances, crops are left unharvested for lack of manpower or lack in financial incentive to do so or due to inadequate technologies and farm facilities. Farm level food losses occur primarily during the harvesting period. Climatic conditions and events such as flood, heavy rains and drought can cause significant crop losses. For example, high water stress during the flowering and maturing stages can lead to rice yield losses as high as 70%²¹¹. Losses can be reduced through improved technologies and changes in farming practices as proposed under this AoI. While there is no definite estimate of food losses for Bangladesh, FAO²¹² recorded all FLW²¹³ estimates for Bangladesh from grey literature to national and sectoral reports between 2000 and 2017 and found an average rate of 7.4% with a wide variation from a minimum of 0.5% to 35%. These high levels of losses negatively impact nutrition and safety of foods, notably fresh produce, which arises as a result of chemical and microbiological risks in horticultural chains and mechanisms for mitigating these risks²¹⁴. Food losses at farm level clearly represent significant volumes and a serious problem that affects sustainable food and agriculture development and raises FNS issues for national agriculture systems. Reducing food losses is paramount to achieve FNS and it is also needed for environmental sustainability: up to 10% of global GHG emissions originated in FLW over 2010-2016²¹⁵.

Action Agenda

1. Formulate a National Strategy on Food Loss and Waste (as per 8FYP)

As per the recommendations of the 8FYP, a National Strategy on Food Loss and Waste will be formulated based on detailed study of food loss and waste in both crop and non-crop sectors.

2. Provide training and tools to improve timing of harvest

The availability of tools (e.g., moisture meters, smart meters for maturity measurement) to ensure that harvest takes place at an optimum time will be expanded. Better access to market information, climate services and improved farmers’ skills and knowledge and the establishment of local information networks will also allow farmers to better schedule harvesting (see AoI 1.1.1). Ensuring that commodities are harvested at the right maturity stage will reduce losses and ensure quality.

3. Promote mechanisation and affordable loss-reducing technologies (as per AoI 1.1.1)

Expanded usage of combine harvesters and other agricultural harvesting and cultivation equipment will support food loss reduction, mitigate nutrient losses, increase efficiency, save time and reduce harvesting and cultivation costs, fostering better returns and livelihoods for farmers. On-site farm waste processing technologies will be developed to convert it into animal feed, for bioenergy purposes or soil improvement. In particular, using the recyclable waste from the fishers, quality feed may be produced; alternatively these feeds could provide rich content of protein and nutrient value to the yields (see AoI 1.1.6). Moreover, intelligent decision-making tools, sensor technologies, and new processing

²¹⁰ *Ibid.*

²¹¹ World Bank. 2019. Climate Smart Agriculture Investment Plan

²¹² FAO. 2019. *Op. cit.*

²¹³ This figure includes waste.

²¹⁴ FAO. 2021. Reduction of post-harvest losses in horticultural chains in SAARC Countries, Regional Technical Cooperation Programme (TCP) Project - TCP/RAS/3502

²¹⁵ IPCC. 2019. Special Report on Climate Change and Land

technologies should be used to recover and make use of edible portions of food and retain the nutrients within that would be otherwise lost. GAP and GAqP will be strengthened. In Bangladesh, GAP has been developed, and BARC is the Scheme Owner, DAE the certification body and BAB the accreditation body, although they are yet to issue certificates. Post-harvest treatments will also be encouraged at farm level: indeed, crops that need to be stored, are highly perishable or need to be transported over long distances can benefit from special treatments to slow deterioration and minimize losses²¹⁶. These may actions such as hot water treatment for disinfection, techniques to inhibit sprouting of items such as potatoes or onions, fungicide application. These methods need to be promoted and new ones that are adapted to different types of farmers developed through R&D (see AoI 1.2.2), in collaboration with the private sector. In fishery supply chain, a solid basement and/or control zones development near catching points can significantly decrease losses and spoilage of fish products. The adoption of these loss-reducing technologies assumes that certain prerequisites are in place. For example, access to finance to be able to invest in these technologies (see AoI 1.1.4) and stable provision of electricity and water.

4. Improve and develop on-farm storage (see AoI 2.1.1)

Existing storage conditions must be improved and modern food storage facilities expanded to meet the demand for storage space and conditions, especially for perishable produce. The NAP PoA 2020 (Key Area of Intervention 2.1.1 and 2.1.2) proposes to construct community storage of grains in each Union. Low cost zero energy cool chambers that can store vegetables and fruits up to one week as well as irradiation facilities to reduce the cost of storage of vegetables like potato and onion at 12-15°C for longer periods will be developed. This will also enable the safety and nutritional quality of the vegetables such as preventing the undesirable sprouting of potatoes and onions and conserving vitamin losses. A lack of storage facilities leads to sudden spikes of regional supplies and decreases prices to levels that are unprofitable for producers. It also limits the amounts of vegetables and non-rice commodities that can reach areas further from the market hubs, such as the North of the country. Making storage and cold storage widely available and promoting its use can also encourage farmers to diversify their production (see AoI 1.1.1 and 1.2.1) by making alternative crops more attractive. Cold storage units are beyond the investment scale of most individual farmers and finance must be provided to smallholders to help them access refrigerated units. The capacity of licensed warehousing will also be increased to help farmers store their produce safely and economically, and help the country manage its food security in times of disruption such as, natural disasters or foreign trade failures. The development of specific types of storage for certain commodities should be promoted. For example, fresh fish storage in improved fish containers such as styrofoam boxes is estimated to enable reduction in quality loss.

5. Encourage the development and adoption of climate smart technologies and practices

Investments in research of resilient crop and horticulture varieties that can resist acute climate events, resist pest and diseases and better withstand harvest will be promoted and disseminated (as per AoI 1.1.1. and 1.1.2) using traditional plant protection and breeding techniques but also innovative plant breeding techniques such as genome editing. For example, improved seed varieties with short-lived and flood-tolerant features will allow *haor* farmers harvest before a flash flood (as suggested by the World Bank's CSAIP for Bangladesh).

6. Shorten value chains (as advocated in AoI 2.2.1)

Any measure that will help shorten the value chain -especially for perishable foods- will contribute to reducing food losses. To this effect, minimising the number of intermediaries between the time food is produce to the moment it sold to the consumer should be sought. For example, by strengthening the role of POs and cooperatives (see AoI 1.1.9) and promoting inclusive cooperative/group-based processing and marketing (see AoI 2.2.4), some intermediaries can be eliminated. Encouraging consumption of

²¹⁶ FAO. 1989. Prevention of post-harvest food losses fruits, vegetables and root crops a training manual

locally produced food is another solution with the promotion of urban-based food production including at the household level (AoI 1.2.3.).

7. Involve and sensitise all value chain stakeholders to develop solutions, including women (see AoI 5.4.2)

Sustainable solutions to reducing farm level food losses will be developed through the creation of multi-stakeholder networks that will engage scientific organizations, the private sector, farmers' associations, and civil society. Importantly, effective network and linkages among growers, processors and other VC actors should be part of these actions. This may include, inter alia, expansion of joint projects and training activities with universities and research institutes. Such networks will not be limited to looking at farm level value chains but will look at issues relating to transport, processing and safe storage (see AoI 5.2.2.). International connections will also be made to learn from other countries' experience. Training and field demonstration programmes will help sensitise producers to the issue of losses. Studies will help national and subnational level agriculturists, post-harvest processors (see AoI 5.2.2.) and farmers in planning their activities across the supply chain structure. It will also enable them to identify the critical loss points, their causes and the likely solutions to address the causes.

8. Improve data available on on-farm food losses

FLW data collection and production, as well as international guidance on conceptual approaches and methodologies adopted are fast evolving. For example, the methodology on SDG 12.3.1 has recently been approved and endorsed. Adoption, piloting, and effective application of this methodology requires capacity development that need to be incorporated in national strategic priorities and actions. Achieving SDG 12.3.1 requires an improved and harmonised data eco-system enabling production and computation of relevant indicators along with proper monitoring and reporting mechanisms in place. The main strategic goals defined in the Bangladesh Strategic Plan of Agricultural Statistics (2016-2030) will ensure that agriculture and rural statistics -including information on food losses- are coherent, reliable, and internationally comparable. This will require strengthening statistical capacity to produce food loss and waste related data (see Strategy 5.3). The private sector will also need to be involved in monitoring their food losses and waste. Both quantitative (or physical) FLW and qualitative (nutritional and well as economic) FLW will need to be researched for adequate interventions to be devised on different commodity value chains, including livestock, poultry and fish.

Cross references

- NFPSP PoA 1.1.1.; 1.1.2.; 1.1.4.; 1.1.6.; 1.1.9.; 1.2.1; 1.2.3.; 1.2.4.; 2.1.1.; 2.1.2.; 2.2.4.; 5.2.2.; 5.4.2.; Strategy 5.3.
- NAP PoA 2020: Key area of intervention 2.1.1. Storage structures for foodgrains and 2.1.2. Pack house-based value chain for vegetable & fruits with sanitary and phyto-sanitary measures for loss reduction
- BBS Bangladesh Strategic Plan of Agricultural Statistics (2016-2030)
- SDG 12.3
- 8FYP

AoI 5.2.2. Reduce off-farm losses

Rationale

In South Asia, food losses are mostly prevalent at production, handling and storage levels, and less at the consumption level²¹⁷. Losses during processing tend to be very high in developing regions because of

²¹⁷ Champions 12.3. 2017. SDG Target 12.3 on food loss and waste: 2017 Progress Report. An annual update on behalf of Champions 12.3.

inadequate local technologies for perishable products such as fruits and vegetables²¹⁸. The agro-food processing industry reportedly contributes about 8% to manufacturing output and 1.7% of GDP²¹⁹. The engagement of the private sector is thus paramount if this issue is to be tackled successfully and for this, the right incentives need to be in place. Transportation from the farm introduces a time gap between various stages of the food supply chain, from production to consumption²²⁰ where food and nutrient losses can occur. This may be due to damage of the produce because of inadequate temperature, mishandling, or even contamination. In Bangladesh, perishable foods are at high risk given the environmental variability, climate and limited availability of cold chains. Inadequate processing facilities also translate in elevated losses for produce such as milk. While Bangladesh needs to focus on achievement of SDG 12.3 which seeks to halve global food waste at retail and consumer levels as well as to reduce food loss during production and supply, care must be taken to work on this target in conjunction with the objective of keeping food safe (see Strategy 5.1.): lack of compliance with and inadequate enforcement of laws, rules and regulations on food safety and hygiene will result in food being discarded and therefore in higher losses. Many of the initiatives seeking to reduce on-farm losses (AoI 5.2.1) also apply to off-farm losses; both AoIs should therefore be considered in conjunction.

Action Agenda

1. Develop, invest and apply appropriate technologies (in line with the BDP 2100)

Public warehouses will be modernised and the expansion of private storage and cold storage in particular encouraged. Simple innovations such as replacing sacks by plastic crates which can reduce damage and losses in tomatoes and perishable vegetables during transport will be disseminated for uptake. Alternative packaging techniques such as vacuum packing, and nitrogen flushing will also be encouraged to preserve the freshness and nutritional quality of food for longer periods. Some innovations have already taken place along the agri-food value chain in Bangladesh with for example the rapid uptake of plastic crates in place of woven baskets and jute sacks to handle high-value, nutritious products such as mango²²¹. Domestic abattoirs, live bird and fish markets will need to be modernised with periodic surveillance conducted. For perishable horticultural commodities, controlled atmosphere storage, modified atmosphere storage, heat treatments (hot water, hot air, irradiation), use of ethylene scrubbers and ethylene inhibiting compounds, postharvest fungicides, sanitizers such as electrolyzed oxidizing water, biotechnological tools will be expanded in order to prolong storage life and reduce losses. Other countries' experiences will be drawn upon.

2. Enhance food processing capacity

Food processing involves the transformation of products originating from agriculture, forestry and fisheries and this plays an important role in tackling FLW by allowing foods to be preserved, conserving micronutrients and enhancing shelf life of the products. For example, crops, grains, fish, horticulture and dairy can be preserved by drying, mechanical dehydration, pasteurization, ultra-heat treatment and freezing, as notable methods. This includes minimal processing as well as secondary (the conversion of ingredients into edible products) and tertiary processing (the production of prepared convenience foods). In Bangladesh, women have an important role in food processing and need to be trained to use appropriate and novel techniques (see AoI 5.4.2)

3. Improve transport infrastructure (in line with AoI 2.1.1.)

Transportation infrastructure from the production site further down the supply chain requires improvement with for example, the development of transport with refrigerated, cooling and ventilation systems (and more generally integrated cold chains). In Bangladesh, agricultural freight is handled mostly by road transport and intermodal connections and efficient networks need to be developed. Other

²¹⁸ Rezaei, M.; Liu, B. 2017. Food loss and waste in the food supply chain. International Nut and Dried Fruit Council

²¹⁹ Hossain, T.M.B. & E. Papadopoulou. 2010. Competitive capacity and export potential of agro-processing industries under the trade liberalization regime of Bangladesh. Asian Journal of Food and Agro Industry

²²⁰ FAO. 2019. *Op. cit.*

²²¹ World Bank. 2020. Promoting Agri-Food Sector Transformation in Bangladesh

means of transport, notably inland water transport must be developed. The number of fish landing centres will be enhanced in coastal areas which should help reduce loss and improve the quality of fish products and seafood.

4. Create an enabling environment for FLW reduction with focus on the private sector

For on-farm food loss reduction (see AoI 5.2.1), some basic conditions and incentives are needed to attract stakeholder' attention to act on food reduction. Access to finance (AoI 2.2.2) and the creation of an enabling environment that will allow MSMEs to invest in efficient technologies that will minimise losses are needed (AoI 2.2.3). For example, a continuous supply of water needs to be guaranteed if cold chains are to be put in place. Transport infrastructure is also a necessary condition as goods need to be moved promptly along the supply chain, especially for perishables. Technology transfers and knowledge on food losses from the public sector and between private agents needs to be facilitated (AoI 5.5.3). The private sector is more likely to act on food loss reduction if they are responding to a demand. For this, an effort to sensitise actors along the value the chain to the relevance of this problem is required (as advocated for in Aols 5.2.1 and 5.2.3 for waste). Rules, regulations and standards and their enforcement is also a prerequisite (AoI. 5.1.1).

5. Involve all value chain stakeholders to develop solutions and sensitise them to the issue of food losses

As suggested in AoI 5.2.1 for farm level losses, efforts will be made to create multi-stakeholder involvement in order to devise solutions and draw from existing experiences both national and from abroad. Communities should document their best practices and be engaged in planning and implementation through a participatory and consultative process. Initiatives will be taken to sensitise all actors of the value chain to the problem of food losses and training imparted on how they can contribute to minimise it. Such measures will target for example ,farmers/truck drivers and workers involved in loading, delivery and logistics operations as well as women given then important role in post-harvest activities.

6. Improve data available on non-farm food losses

See action 7 in AoI 5.2.1.

Cross references

- NFPSP PoA 2.1.1.; 2.2.2.; 2.2.3.; 5.1.1.; 5.2.1.; 5.2.3.; 5.4.2.; 5.5.3.; Strategy 5.1.; Strategy 5.3.
- BDP 2100
- SDG 12.3

AoI 5.2.3 Tackle food waste

Rationale

Food waste refers to the decrease in the quantity or quality of food resulting from decisions and actions by retailers, food services and consumers.²²² Food waste is different from food loss due to distinct drivers that generate it, thus requiring different solutions. Food that is still fit for human consumption may be removed from the supply chain either by choice or because it is spoiled or expired. In Bangladesh, food waste contributes 68% to the aggregated municipal solid waste which amounts to 19,362 tons/day²²³. Not only does the disposal food waste constitute a sizeable logistical problem, especially in the context of a fast-growing population, it also raises ethical issues in a country where many still suffer from food insecurity and malnutrition. A survey found weddings to be the main

²²² FAO. 2019. *Op. cit.*

²²³ Alam, O. and He, P. and Fan, L., Food Waste in Bangladesh - Quantification, Impacts and Management: A Review .2015. IWWG-ARB 2015 2nd Symposium of Asian Regional Branch of International Waste Working Group, 2015

²²⁴ A 2019 survey undertaken by Action Aid Bangladesh (AAB) and Macomm.

culprits in food waste followed by restaurants and homes.²²⁴ Food waste is also linked to retailers' and consumers' behaviour with an oversupply of food due to consumers' shopping and eating habits²²⁵. Currently, much of the urban food waste is mixed with other household waste thus impeding its recycling. It ends up in dumping sites without any segregation or pre-treatment leading to leachate and GHGs²²⁶. Open burning is also frequent both in rural and urban areas adding to the environmental pollution. The reduction of food waste will not only impact food and nutrition availability but also contribute in decreasing the substantial levels of environmental pollution that currently exist.

Action Agenda

1. Raise awareness on food waste issues and implement prevention and mitigation measures

While campaigns already exist to educate the population on the importance of safe and nutritious food, emphasis will be placed on the problem of food waste and on the measures that individuals, households, schools and communities can take to tackle the problem. Awareness will be raised on portion or serving sizes and standardized food preparation quantities both in homes and in institutional food service. Women will be targeted for their key role in ensuring FNS within the household (see AoI 5.4.2). "Plate" waste in hospitals, canteens, school cafeterias, restaurants and hotels also require attention. Restaurants and events' organisers will also need to be targeted by awareness campaigns with clear guidance on the actions they may take to reduce waste. Training and outreach programmes on how to appropriately conserve and preserve food will be conducted using different platforms such as television cookery programmes, virtual learning modules and community-based activities. Public campaigns and advocacy such as the UN's International Awareness Day on FLW or FAO's and Messe Düsseldorf's Save Food Global Initiative will be promoted. Innovative initiatives around the globe will be examined and their relevance to Bangladesh gauged for possible adoption. Among them: the Love Food, Hate Waste campaign, which has resulted in significant changes in reducing household waste by bringing together government agencies, community organisations, chefs, businesses, trade bodies and local authorities and individuals can be suitably adapted.

2. Labelling (see AoI 2.3.1 and 3.2.1)

Bangladesh recently promulgated the BFSA Packaged Food Labelling Regulations 2017²²⁷ further measures will be taken to ensure that nutrient labelling and product information is available on food products in order to guide the consumers to select foods wisely, know the nutrient contribution of the product and consume them within the best date. Bangladesh will need to participate and contribute to the current debates regarding food labels which have gained increased focus globally in recent years. Food labels need to strike a balance between ensuring food safety, nutrition returns and minimising food waste. Laws and regulations will be adapted to this effect and incentives and training given especially to MSMEs involved in the value chain.

3. Support technological innovations to ensure re-use and repurposing of waste

Support will be provided for technological innovations to ensure re-use and repurposing of waste, including i) establishment of on-site food waste processing technologies that can be incorporated into residential and commercial sites, ii) installation and operation of waste management systems iii) biotechnology solutions to convert food waste into animal feed, energy or fertiliser, iv) nutrient extraction from food waste, v) intelligent decision-making tools, sensor technologies, and new

²²⁵ FAO. 2018. Food loss and waste and the right to adequate food: Making the connection, Right to Food Discussion Paper

²²⁶ Alam, O. and He, P. and Fan, L. 2015. Food Waste in Bangladesh - Quantification, Impacts and Management: A Review. IWWG-ARB 2015 2nd Symposium of Asian Regional Branch of International Waste Working Group

²²⁷ BFSA. 2017. BFSA Labelling Regulations of Packaged Food 2017.

processing technologies, to recover and make use of edible portions of food that would be otherwise wasted.

4. Introduce innovative/modern solutions for waste reduction through mobile applications and networking

Learning from other country experiences, mobile applications to maximise the sale or donation of food will be developed for Bangladesh, in collaboration with the private sector. 'Feeding India' for example, collects excess food from restaurants and caterers and delivers it to undernourished people through a network of volunteers. 'Too Good To Go' is an application currently present in 12 European countries that enables food outlets to sell the food that will otherwise go waste, at reduced prices.

5. Improve data available on waste

As the interest in FLW grows especially in light of the aim to achieve SDG 12.3.1., a number of studies on food waste have been carried out but they tend to focus on particular aspects (restaurants in Dhaka, food waste management, etc.). There is a clear need to monitor the food waste situation in different settings of the country to be able to implement policy actions in the right direction (see Strategy 5.3). As for food losses (5.2.1 and 5.2.2), attention will be given to physical, nutritional, and economic losses.

Cross references

- NFPSP PoA 2.3.1.; 3.2.1.; 5.2.1.; 5.2.2.; 5.4.2.; Strategy 5.3.
- SDG 12.3

Strategy 5.3. Improve data, information and analysis for evidence-based planning, monitoring, evaluation, and update of policies and programs through wider partnerships

AoI 5.3.1. Produce/generate, disseminate and ensure access to reliable and timely FNS data and information by setting up an inter-agency FNS data sharing mechanism

Rationale

FNS data production, generation and dissemination plays a pivotal role in evidence-based decision and policy making by helping to gauge economic development, poverty and nutrition progress. A distinct feature of the planning process in Bangladesh – led by IMED, is the emphasis on results-based management tools implying regular monitoring and evaluation of targets, achievements and financing. Accordingly, the CIP2 (2016-2020) provided an analytical framework to assess the results achieved in poverty and nutrition as well as the investments made towards achieving these results. Data are also needed for decision-making by actors along the FVC and can improve the functioning of value chains and marketing systems (see Strategy 2.2). Certain information for example, can help direct and drive private investments. Not having the information can drive up transaction costs and create entry barriers in agro-food processing, marketing and distribution (AoI 2.1.4). While BBS is the centralized official bureau for collecting and disseminating data on a host of FNS relevant subjects, many other organisations also have a role in data generation. For instance, BNNC has developed a web portal for divisional and district level nutrition profiling and a data warehouse was also developed for NPAN2 nutrition related indicators monitoring. The wide range of data required by all stakeholders calls for an FNS data strategy to develop a comprehensive network of FNS information system, in line with "Digital Bangladesh". A prerequisite for such system is the harmonisation of FNS information systems across sectors which consider UN fundamental principles, and quality standards and good practices such as the International Monetary Fund (IMF) General Data Dissemination System (GDDS) and Special Data Dissemination Standards (SDDS). Data provided by the government functions are not always made

available in a timely fashion or remain unavailable in some key areas (for instance, upazila level price data) and there is scope for improvement in terms of how they are publicised (e.g., websites not updated or not user-friendly). New types of data (e.g., Big data, block chain data – see AoI 5.3.2), interconnections between databases to enable data exchange and accessibility, and property rights on data are also issues that need consideration.

Action Agenda

1. Set up a FNS data strategy for a comprehensive network of FNS information systems

FNS data encompasses a continuum between agricultural production, market access and food utilization data which implies that data collection processes and their related institutional frameworks need to be organized in a comprehensive way. The Bangladesh Strategic Plan for Agriculture and Rural Statistics (SPARS, 2016-2030), for instance, aims to strengthen and develop well-coordinated and integrated agriculture and rural statistical system. With the goal of strengthening the capacity to monitor progress towards reducing undernutrition and to direct funding to more cost-effective and evidence-based programmes, the NIPN, recognises as main challenge, data generation methods, data frequency and validation processes. Improved coordination between the agriculture-specific, nutrition and FNS data collection and institutional frameworks (AoI 5.3.4) will require a FNS data strategy under the leadership of BBS. To this end, enhancing the role of BBS as a central repository and data provision and validation unit will be essential. To ensure no overlap, reliable and timely data and filling of data gaps, a comprehensive FNS data assessment will need to be performed with an emphasis on disaggregated and location specific data. Based on that, agreements and protocols for data exchange among the various institutions will be established.

2. Strengthen capacity and budget allocation of all FNS data collecting agencies through an RBM approach

All public data collecting agencies, including BBS, need to be strengthened through technical capacity development and training to address the vital concern of providing timely and more accurate FNS related data and information. An RBM approach will be systematically applied to assess institutional needs and gauge activity planning of different agencies involved. Data and information collection especially at subnational level, dissemination and online access will be given priority to improve transparency. To this end, the M&E function within data collecting agencies, including BBS, will be also strengthened including at local level, emphasising data quality, timeliness and access. In line with the 8FYP, independent evaluations and assessments will be implemented to ensure that expected goals are met.

3. Leverage the FAO Hand-in-hand initiative by building on the existing FNS institutional framework for data management

The FAO Hand-in-hand initiative²²⁸ and other relevant initiatives will be leveraged. Aimed at country ownership, the FAO Hand-in-hand (HiH) initiative in Bangladesh will build on the success of existing FNS national data management systems - primarily that of BBS, the MoFood, the MoA, the MoEFCC - and on well-established FNS institutional frameworks – the Food Planning and Monitoring Committee (FPMC) and the Food Policy Working Group (FPWG) and TTs- for data management to facilitate evidence-based policy decisions and uptake (AoI 5.5.1). The main FNS institutional actors

²²⁸ Using the most sophisticated tools available, including advanced geo-spatial modeling and analytics, Hand-in-Hand identifies the biggest opportunities to raise the incomes and reduce the inequities and vulnerabilities of the rural poor, who constitute the vast majority of the world's poor. It uses these tools to understand a comprehensive view of full economic opportunities and to improve targeting and tailoring of policy interventions, innovation, finance and investment, and institutional reform accordingly.

will therefore support to HiH²²⁹ will generate a Geographic Information System geospatial platform with location specific data (up to district and upazila level) as an output. Synergies with relevant partners and strategies both at national (e.g., SPARS, the Bangladesh Space Research and Remote Sensing Organization (SPARRSO) and NIPN) and international level (e.g., development partners), will be explored.

4. Integrate the Aid Information Management System (AIMS) with the HiH and investment planning

Established in 2010 and based on the Paris Principles of aid effectiveness, the Joint Cooperation Strategy (JCS) primarily aims to translate the international commitments on aid effectiveness at the country level. Anchored in the JCS, Local Consultative Group (LCG) represents the main coordination platform between the government and DPs in Bangladesh. The 8FYP defines the AIMS as the platform through which all aid data is shared by DPs and made public in Bangladesh. AIMS will have to be improved and integrated with the HiH initiative, the NIPN, and with the new upcoming CIP.

Cross references

- NFPS PoA AoI 2.1.4; 5.3.2; 5.3.4; 5.5.1
- 8FYP 2020-2025
- Bangladesh Strategic Plan on Agricultural and Rural Statistics (2016-2030)
- NIPN (2018-2023)
- PP 2041

AoI 5.3.2. Develop and implement a big data analytics ecosystem for the food system

Rationale

Data hold a key role in tackling some of the challenges faced by food systems to ensure FNS for all. The amount of data collected in the context of food systems is substantial and the SDGs, especially SDGs 2, 3 and 17, encourage sharing of information on agriculture and nutrition.²³⁰ Big data are high-volume, high-velocity and high-variety information assets that require new forms of processing and governance to enable enhanced policy decision making. With big data, data sources are unstructured or semi-structured, ranging from unstructured texts, spatial data such as audio and image files produced by tracking smart devices, to inventory control systems or point of sale data. Big data analytics is the process of examining big data to uncover information such as hidden patterns, correlations or market trends that can help with decision making. In order to be able to translate digital opportunities into agro-food value addition, a data infrastructure is required to complement FNS structured government database systems (AoI 5.3.1). To harness the potential of big data in agro-food sustainable development, the realization of Digital Bangladesh and the achievement of full power generation capacity in rural areas is required (see AoI 2.2.3). An effective big data analytics ecosystem for the food system can help devise adequate responses to climate change variability, environmental impacts of food production (footprint), food safety, and can help analyse and forecast overall FNS situation, including with regard to food markets in terms of production, supply, demand, and prices. When integrated with spatial data (e.g., SPARRSO, HiH), it can help improve the targeting effectiveness of social protection and rural development programmes' beneficiaries; it can also reduce information asymmetries along the FVC.

²²⁹ Such as the Food insecurity and experience scale (FIIES) and the Indicator for Food Price Anomalies (IFPA) and other data related to agro-ecology, water, land, soils, GHG.

²³⁰ Musker, R. 2019. Big data in agriculture and nutrition. In Agriculture for improved nutrition: Seizing the momentum. Chapter 14. Fan, S. Yosef & R. Pandya-Lorch (Eds.). Wallingford, UK: International Food Policy Research Institute (IFPRI) and CABI

thereby facilitating investments decisions (see AoI 2.1.4) by, for example, providing real time data to farmers (see AoI 2.2.5) and other FVC agents.

Action Agenda

1. Develop human resources to harness the opportunities offered by big data analytics

In order to fully harness the opportunity offered by Big data analytics, human resources will continue to be developed, leveraging on the national education system and ICT curriculum, and the large pool of online workers²³¹. This will include a training need assessment of FNS related institutions and the delivery of ICT training of public workers in key FNS institutions.

2. Develop a big data governance framework

This action is closely aligned with Strategy 5.5 aimed at strengthening FNS governance, policy coherence, capacity strengthening and leadership across stakeholders. BBS, MoF, MoC, MoInd, MoEFC, and all other government institutions collecting and/or storing agricultural and FNS-related data will have to work with data providers and data users to establish clear frameworks governing data access and use in line with the e-Government Master Plan for Digital Bangladesh (2019) and the PP2041. The regulatory and governance framework will have to be adjusted (see AoI 2.1.4) and private data protection ensured, in particular with reference to the provision of private sector data for public use and agro-food related research (including food safety).

3. Combine big data with spatial data

The HiH initiative and SPARRSO activities (see AoI 5.3.1) will be leveraged to integrate big data with spatial data. This integration offers the opportunity for more effective spatial targeting and tailoring GoB, DPs and private investment programmes. A system of incentives for the provision of farmer level data will be considered and will be piloted in order to obtain data in synergy with rural digitalization and financial inclusion. To this end, farmers and agro-food processing and marketing groups and cooperatives may be leveraged too (AoI 1.1.9 and AoI 2.2.4).

4. Facilitate the connection between the ICT functions and Nutrition Sensitive Value Chains

In line with the e-Government Master Plan for Digital Bangladesh (2019) and the PP2041, the key FNS actors will have ICT units able to effectively follow up and translate Digital Bangladesh into reality in the FNS-related government offices. PPPs will be promoted to ensure investment potential in the sector is fully exploited at rural level. For instance, the positive experience of the Union Digital Centres established by Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&C) with a2i programme at Union Parishad level to provide ICT support to rural people may be emulated.

Cross references

- NFPSA PoA AoI 1.1.9; 2.1.4; 2.2.3; 2.2.4; 2.2.5; 5.3.1; Strategy 5.5.
- E-Government Master Plan for Digital Bangladesh (2019)
- PP2041

AoI 5.3.3 Operationalise implementation of the NFNSP 2020, its Plan of Action and Country Investment Plan through an effective M&E system

Rationale

Evidence-based support to policy makers is needed more than ever to address the multi-layered and fast-evolving challenges faced by Bangladesh in its endeavour to achieve FNS for all and in particular

²³¹ ICT Division. 2019. E-Government Master Plan for Digital Bangladesh (2019). Government of Bangladesh

for the poorest and most vulnerable communities, especially women and children, the elderly and the disabled living in poor, disconnected and fragile areas. Adequate information and analyses must be provided to decision-makers so that they can effectively prioritise interventions. In line with the CIP2 (2016-20,) the NFNSP adopts a food systems approach in order to address the complexities of the food system. This PoA aims at operationalizing the NFNSP by translating the targeted initiatives into concrete areas of interventions within food systems in connection with other reference strategic and programmatic documents. In order to effectively prioritize interventions and necessary investments, a new CIP needs to be designed. The CIP2, as of June 2019, was worth 19.2 billion USD, the equivalent of more than 6% of GDP and involved 19 government ministries, agencies and departments. With new challenges emerging, the breadth and size of a new CIP is likely to be even greater with important implications for its implementation and ever more reliance on disaggregated and location-specific data collection (AoI 5.3.1), to adequately target beneficiaries as prioritized by the 8FYP and monitor progress.

Action Agenda

1. Design a new CIP for local and sustainable food systems

The CIP2 ends with the latest monitoring reporting cycle planned to take place over 2021. It sets forth priority nutrition-sensitive investment programmes for each interrelated component of the food systems – growing, harvesting, packing, processing, transforming, marketing, consuming and disposing of food – and related financing. While the heterogeneity of data and data sources required to monitor the CIP2 demonstrate the need of a FNS comprehensive data strategy (AoI 5.3.1), the need to make this effort location-specific, sustainable and will drive the design of a new CIP. The setup of the new CIP will require extensive consultations among the stakeholders (especially at local level), including the GoB and FNS partner institutions, private actors and DPs. New FNS partners and stakeholders will be included in the consultations as FNS-relevant domains expand through emerging crosscutting themes such as the Blue Economy (AoI 1.1.7) or the need to consider regulation and competition functions into agro-processing (AoI 2.1.4). The methodological approach will also need to account for the heterogeneity of data used, coming from both structured (AoI 5.3.1) and unstructured/semi-structured (AoI 5.3.2) sources.

2. Set up a unified institutional framework for NFNSP PoA, SDGs and the new CIP

Accordingly, building on the current setup, the FNS institutional framework will be revised to account for a more local, inclusive and private sector oriented nature. Specifically, the composition of FPMC, the National Committee, the FPWG and TTs will be revised by including stakeholders including new institutions (e.g., from the Blue Economy Cell or the Bangladesh Competition Commission) and ensuring local stakeholder representativity. The continued involvement of the private sector and DPs will be ensured with an increased involvement of the relevant LCG. In addition, a more institutionalised involvement of the DPs at operational level by sharing projects' information and data will be discussed.

3. Strengthen the monitoring framework leveraging on existing initiatives and synergizing with the private sector

The monitoring framework will require an in-depth review to make it more relevant for the various stakeholders. Engaging them in the process will ensure that the outputs produced meet expectations. To this end, a survey of the various stakeholders (including the private actors) will be carried out to understand the usefulness of the monitoring products. This will, in turn, increase the commitment and active participation by the various actors to the process thereby also contributing to a strengthened policy uptake (AoI 5.5.1). The monitoring framework will be adjusted based on the required monitoring. These adjustments will be leveraged based on available human and financial resources. The monitoring products may be used by MoF to account for FNS investment volumes, to align DPs' technical and financial support to country investment's needs and gaps, to feed into the United Nations Sustainable

Development Cooperation Framework Programme for Bangladesh as well as the SDG progress report. They may also find a role for the private sector and investors within the framework of the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI). In addition, synergies with AIMS, HiH and the SUN networks at various levels will be exploited. An early engagement of all stakeholders is required to tailor the monitoring process and outcomes to their needs.

Cross references

- NFNSP PoA AoI 1.1.7; 2.1.4; 5.3.1; 5.3.2. ; 5.5.1
- 8FYP 2020-2025
- CIP2 2016- 2020
- CIP2 MR20
- Roadmap to the CIP2 MR20

AoI 5.3.4. Ensure the cross-sectoral integration of the NFNSP, PoA and its investment plan with other FNS-related initiatives and its coherence with national socio-economic development efforts

Rationale

The PP2041 is a unified plan of cross-sectoral multidimensional policies which outlines the vision on how to reach the goal of Bangladesh becoming a developed nation by 2041. In this context, a necessary condition to effectively operationalize the NFNSP PoA and its investment plan (AoI 5.3.3) and to ensure its policy uptake (AoI 5.5.1) is its coherence with the PP2041 strategy formulated in the five-year plans, and the cross-sectoral integration with other FNS-related initiatives. This is ensured, firstly, through adequate stakeholders' participation in FNS governance (including the private sector's), which requires effective representation in the unified institutional framework for NFNSP PoA, its investment plan and the relevant SDGs monitoring (Action 2 of AoI 5.3.3); and secondly, by leveraging on existing initiatives and synergizing with the private sector (Action 3 of AoI 5.3.3). From a practical point of view, this is done through the inclusion and active participation of all potential FNS stakeholders – including the General Economic Division (GED) in the Planning Commission providing support to sustainable and inclusive planning project in monitoring the SDGs - from design to implementation of both the NFNSP PoA and its investment plan. Also, adequate cross-fertilisation of the monitoring efforts and its related products (e.g., thematic policy briefs) will ensure that the outputs of the PoA and its associated investment plan are effectively utilized. This can be facilitated by enabling positive collaborations among the government, the private sector and DPs through continuous institutional capacity strengthening of relevant FNS agencies (AoI 5.5.1). To ensure this, high level political commitment and leadership to prioritise FNS of the most vulnerable and poorest, in the most remote and fragile areas of the country must continue.

Action Agenda

1. Set up a unified institutional framework for NFNSP PoA, SDGs and the new CIP (See Action 2 of AoI 5.3.3.)

2. Strengthen the cross-sectoral integration of NFNSP PoA and its investment plan by leveraging on existing initiatives and synergizing with the private sector (See Action 3 of AoI 5.3.3.)

3. Strengthen capacities of the BFS, BNCC, and FPMU (See Actions 1, 2 and 3 of AoI 5.5.1)

Cross references

- NFPSP PoA AoI 5.3.3; 5.5.1
- CIP2 2016-2020
- CIP2 MR20
- Roadmap to the CIP2 MR20
- PP2041

Strategy 5.4 Strengthen regulatory management, climate resilience and gender roles

AoI 5.4.1. Develop and implement effective regulatory instruments and guidelines for priority issues

Rationale

Existing regulations will be effectively implemented, and new guidelines/regulations introduced as required, to ensure sustainable management of natural resources, safe diets, and inclusive markets. Food safety, market-place management (including online and retail markets), food price stabilization, NCDs control, environment conservation and biosafety, anti-trust and anti-monopoly, breast milk substitution, complementary food, and the right to adequate food are among the priority issues. The right to food is enshrined as a fundamental principle of state policy in Article 15 of the Constitution and the country has policies for ensuring the right to safe food, but it is not a legal right. The 8FYP highlights foodborne diseases and dietary risk exposures arising from pesticide residues in food, use of harmful agrochemicals and excessive dose of food preservatives, as areas of concern. Alongside, NCDs reportedly account for an estimated 59% of total deaths. With increasing reliance on ready-to-eat and processed foods and online shopping for groceries and food delivery in urban areas, ensuring food safety is critical. Awareness will be created on all these issues and necessary measures taken (see AoI 3.3.3, 3.3.4, 4.1.2, 5.1.1, 5.1.2, 5.1.3). In line with the 8FYP, measures will be initiated to strengthen surveillance and response to foodborne diseases of plant and animal origin. Enforcement of the Breastmilk Substitutes (BMS) Act - 2013, related byelaws and implementation of complementary feeding guidelines will continue, in line with the NNP 2015. The Competition Act passed in 2012 needs regulatory frameworks and enforcement. The government will intervene when required, to control fluctuation in food prices of essential commodities such as onions²³². Rules will be framed by the Competition Commission, to regulate anti-competitive behaviour and arrangements among companies, to ensure equitable and inclusive food markets.

Action Agenda

1. Adopt consistent practices of integrated nutrient, pest, and crop management

The 8FYP states that introducing GAP is an unfinished agenda of the 7FYP and establishing it will ensure better natural resource use and food safety. GAP Policy was adopted by the government in late 2020. Awareness and dissemination of good agricultural practices will be undertaken among extension workers and farmers for enhancing capacities and uptake of GAPs. To this end, training and technology transfer will be provided and promoted on safe and nutritious food to ensure safe levels of chemical and pesticide use in crops and thereby reduce risk of foodborne diseases (see also AoI 3.3.4).

2. Strengthen monitoring and enforcement system under the BMS Act

The BBF has observed that violation of the BMS Act of 2013 and rules of 2017 is found across the country, with BMS products being promoted and marketed in contravention of the Act²³³. The roles and responsibilities defined for different actors under the Act will be enforced. A two-pronged approach

²³² Global Times.2019. Bangladesh launches fair price onion outlets to stabilize market. 20 November

²³³ Bangladesh Breastfeeding Foundation website. BMS Act 2013 Monitoring, Enforcement and Awareness

will be followed, viz. increasing awareness in the community on exclusive breastfeeding for the first six months followed by appropriate complementary feeding after six months, and penal action against promoters and advertisers of BMS. Adequately trained human resources will be created to generate awareness at the community level, in line with Aol 3.1.3. Measures will be introduced to create an enabling environment for women to breastfeed at the workplace and in public spaces²³⁴.

3. Enact a Right to Safe Food Act

Bangladesh has a number of policies on food and food related issues, which require a structured policy framework for enforcement. The Bangladesh Law Commission has recommended enactment of a Right to Food Act and constitution of a Food Commission to oversee its implementation. It has also observed that sensitisation of policy makers is required to see the relevance and need for such a measure²³⁵. Keeping in mind the importance of food safety, steps will accordingly be taken to enact a Right to Food Act.

4. Develop new regulations with guidelines for enforcement, to prevent and control NCDs

Following up on the 4th Health, Population and Nutrition Sector Programme (4th HPNSP) Operational Plan (OP) Non-Communicable Disease Control (2017), a national STEPS survey²³⁶ in 2018 concluded that targeted interventions are required to combat the rising burden of NCDs²³⁷. Implementation of the multi-sectoral action plan for prevention and control of NCDs (2018-2025) with a three-year operational plan, will be accelerated with focus on the action areas of advocacy, leadership and partnerships; health promotion and risk reduction; health systems strengthening for early detection and management of NCDs and their risk factors; and surveillance, monitoring and evaluation, and research. An operational PoA with regulations and guidelines for enforcement will be developed for the remaining period 2021 to 2025, including nutrition labelling, reformulation of food standards limiting high sugar, salt and fat, and banning industrial trans fats; restriction of food advertising particularly marketing of unhealthy foods to children and imposing tax on sugar sweetened drinks and ultra-processed junk foods. Mass awareness will be generated through print and electronic media campaigns giving nutrition advice and education on NCDs.

5. Formulate enforcement rules under the Competition Act (2012)

Lower income groups are impacted more by anti-competitive practices in markets for basic goods and services. Competition policy enforcement is necessary to complement poverty reduction measures²³⁸. In line with this, enforcement rules will be formulated under the Competition Act (2012) and steps taken to create awareness on competition related capacity building and advocacy. The Competition Commission established following the enactment of the Competition Act (2012) will adopt necessary measures to create awareness of the law amongst all stakeholders, viz. private sector enterprises, researchers, consumer groups, general civil society, and relevant government ministries. Rules will be framed to ensure better consumer protection, allow new entrepreneurs to join the market, prevent unhealthy business practices in both physical and online markets and undesirable fluctuation in price of food commodities.

²³⁴ As recommended by Independent Review Team (2020) 4th Health, Population and Nutrition Sector Program (HPNSP) 2017-2022 Mid-Term Review Report April 2020

²³⁵ Bangladesh Law Commission, 2015. A Study on Ground Situation of Right to Food in Bangladesh

²³⁶ STEP-wise Surveillance for NCD risk factors (STEPS) is a WHO-developed, standardized framework for monitoring the magnitude of NCD risk factors in a country. It comprises of 3 steps: STEP 1 determines behavioural risk factors by questionnaire assessment, STEP 2 figures out physical risk factors by physical measurements and STEP 3 finds out biochemical risk factors by biochemical measurements.

²³⁷ NIPSOM, GoB & WHO, 2018. Bangladesh NCD Risk Factor Survey 2018

²³⁸ Razzaque, A. 2019. Promoting Competition for Sustainable and Inclusive Development in Bangladesh. Keynote paper prepared for the seminar on The Role of Competition Commission in Sustainable and Inclusive Development organised by the Bangladesh Competition Commission

Cross references

- NFNSP AoI 3.1.3; 3.3.3; 4.1.2; 5.1.1; 5.1.2; 5.1.3
- NPAN2
- Multi-sectoral action plan for prevention and control of NCDs 2018-2025 with a three-year operational Plan
- 4th HPNSP Operational Plan (OP) Non-Communicable Disease Control
- BMS Act (2013) and by-laws
- Food Safety Act (2013)
- Competition Act (2012)
- NNP 2015
- PP2041
- 8FYP 2020-2025
- NAP 2018

AoI 5.4.2 Strengthen gender mainstreaming for food and nutrition security

Rationale

Recognising and focusing on women for their key role in ensuring FNS across the value chain is one of the guiding principles of this PoA. Women account for about half of the work force in agriculture and nearly three-fourth of the rural female work force is engaged in agriculture, as per the Labour Force Survey (2016-17); a majority however do not have title to land and access to support services. The agricultural wage differential was 31.4% in 2018-19²³⁹. Further, women belonging to ethnic and marginalised communities are generally found to be more food and nutrition insecure. The National Women's Development Policy (2011) flagged the need to recognize women's contribution in agriculture and remove wage discrimination. The Gender Policy of the NSSS 2018 has recommended a 50% share for women for settlement or agriculture in *khas* lands; the Ministry of Land (MoL) has been taking measures to secure women's rights to land. Based on the positive results of the Agriculture, Nutrition, and Gender Linkages (ANGeL) pilot project across 16 upazilas in empowering women and improving dietary diversity, the MoA is examining scaling it up across the country²⁴⁰. "Capacity building of women, inclusive and gender-sensitive financing arrangements and institutional reforms to tackle gender-based inequalities and discrimination", are priorities listed in the NFNSP (AoI 2.4.1 and 2.4.2). The gender dimension will be integrated in food loss assessment and reduction measures under Strategy 5.2 of the PoA. At the institutional level, capacities will be strengthened for generating gender disaggregated data at all levels, to enable targeted policy making with a socially inclusive approach.

Action Agenda

1. Strengthen the capacity of BBS to disaggregate data by gender and social groups

The role of data for a proper understanding of the ground situation of FNS by social group and gender to enable targeted policy making especially for poor and vulnerable women is crucial. While numerous laws, policies and plans endeavour to address gender equality and women's empowerment, the data and statistics needed for monitoring and reporting are not available for many areas, are uneven and/or are not updated²⁴¹. Steps will be taken to improve gender disaggregated data production by strengthening the capacity of BBS on gender statistics, including through data collection on priority data needs such

²³⁹ Calculated in the CIP2 MR20 in terms of "male premium": (male wage – female wage)/ female wage.

²⁴⁰ Dhaka Tribune. 2019. Empowering women in agriculture. 13 April

²⁴¹ UN Women website. How are we making women count in Bangladesh?

as time-use, violence against women, and sex-disaggregated population statistics, to enable gender mainstreaming in food systems.

2. Promote access to land by women

As per the Agriculture Census 2008, just 4.6% of all land holdings (farm and non-farm) and 3% of farm holdings were headed by women as owners or tenants. Access to land is important for women to have access to inputs and support services for agriculture. The MoL has been taking measures for securing women their rights on land: by modernizing land records and ensuring inclusion of women's names in digitized records, incorporating names of both husband and wife in the lands and houses allocated to landless households, ensuring equality in ownership between husband and wife and giving comprehensive training that includes understanding of the rights of women, to staff at Land Administration Centre. To ensure and protect the ownership and rights of women to land, updating Land Records with joint titles will be prioritised while disseminating information and services regarding land affairs. Deeds (*kabuliat*) will be registered in the name of both husband and wife when allocating land to rehabilitate landless people. Priority to women or joint ownership of husband and wife will be adopted in the Agriculture and Non-agricultural Khas Land Settlement Policy, with priority to poor, destitute and physically challenged women. Inclusion of women in management committees of different initiatives will be promoted, as mandated for example in the *Chingri Mahal* Management Policy.

3. Ensure wage parity for similar agriculture work done by men and women

The Labour Force Survey 2016-17 found that in rural areas, the average monthly income of men in skilled agriculture, forestry and fishery was 9,549 taka as against 7,803 taka for women. Legislative measures will be taken to ensure wage parity with men for similar work done by women in agriculture.

4. Mainstream gender in agriculture extension and scale up Agriculture, Nutrition, and Gender Linkages (ANGeL) initiative

The MoA in collaboration with IFPRI, United States Agency for International Development (USAID) and A4NH, piloted a three-year initiative called Agriculture, Nutrition and Gender Linkages (ANGeL) from 2016-18 in 16 upazilas²⁴². The initiative's design focusing on the gender pathways to link agriculture with nutrition, addressed the NAP's thrust areas of promoting crop diversification and production of crops with greater nutrition-value by agriculture extension staff, empowering women, encouraging their participation in production and marketing for income generation, and improving their FNS status. The pilot demonstrated improved production and dietary diversity, farmers' income, and women's empowerment in agriculture through greater role in decision making and collectivisation. A national programme of agriculture extension will be designed based on the ANGeL approach for scale up across the country.

5. Integrate gender dimension into food loss assessment and prevention strategies

The NFNSP recognises the importance of reducing FLW along the value chain with Strategy 5.2. dedicated to this issue. Women play a major role especially in the postharvest phase of food processing and value addition and factors inhibiting their access to inputs, technology and other resources influence FLW. The gender dimension will be integrated in the FLW assessment exercise and prevention strategies developed using tools like FAO's four-step approach for gender-responsive food loss reduction.

Cross references

- NFNSP AoI 2.4.1; 2.4.2; Strategy 5.2.
- National Social Security Strategy Gender Policy (2018)
- National Women's Development Policy (2011)

²⁴² Society for Bangladesh Agricultural Extension Network website. Good Practice Note - 5

AoI 5.4.3. Develop and promote climate-resilient food systems

Rationale

Bangladesh has been witnessing the adverse effects of global warming. Climate change and its associated events are expected to further adversely impact on agriculture and rural livelihoods. Intrusion of saline water caused by rise in sea level will exacerbate the shortage of suitable agricultural land and affect the livelihood of people living in coastal regions. Measures to support climate resilient food systems are being carried forward through several initiatives. As discussed under AoI 1.1.1, 4.2.1 and 5.3.2, the NFNSP will improve climate resilience through promotion of Climate Smart Agriculture (CSA), provision of improved technologies, information on differential impact on different production activities, capacity building and financial support. Inter-ministerial cooperation, convergence, partnerships, and coordination are key for this to happen effectively; ongoing initiatives in this direction will be strengthened and an enabling policy environment created. The MoEFCC has demonstrated enhancement of climate resilience and food security with community participation in coastal areas with endeavours such as the Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR) project (2016-20) through mangrove forest restoration integrated with livelihood promotion. Finance will be raised in partnership with the private sector as recommended by the CIP2 MR20 and the Climate Fiscal Framework (CFF) 2020. Appropriate innovative fiscal instruments (e.g., tax incentives for low carbon green development, subsidy for green products, and loan and insurance products) will be worked out drawing on experiences in other countries, as recommended under CFF 2020. Execution of the many initiatives formulated requires effective governance based on proper understanding of the issues. To this end, capacity building on climate adaptation, resilient food systems and finance will be undertaken at multiple levels – government officials at national and sub-national levels, private sector, NGOs and community at the grassroots. The government will also actively engage with the international community for knowledge sharing, raising finance, demonstrating pilots and learning from best practices.

Action Agenda

1. Establish National Environment Management Council (NEMC)

In line with the recommendation in the PP2041, a National Environment Management Council (NEMC), chaired by the Prime Minister will be established. It will have representatives from the ministries of finance, planning, environment and forestry, land, agriculture, water, fisheries and livestock, law, energy and power, industry and transport as members, and the department of environment will provide the secretariat service. The main function of the NEMC will be to ensure the proper integration of environmental concerns in the development agenda and monitor implementation progress in different sectors including increasing resilience of crop and livestock production systems in a sustainable manner.

2. Develop water modelling

Water modelling endeavours will continue in order to further develop solutions for watercourses, water supply, storm water and wastewater systems to improve management of water resources. This will help with flood control and flood forecasting- especially crucial in areas of the North prone to flash flooding-irrigation and drainage, and salinity and sediment issues. It will contribute to the development of waterways as means of transport (see AoI 2.1.1.)

3. Restore mangroves in coastal areas

Bangladesh has a coastline of 580 km across 19 coastal districts. With two-thirds of landmass less than five meters above sea level and 30% of its arable land in coastal areas, the country is highly vulnerable to sea level rise, cyclones, storms, and storm-induced tidal flooding. It has been demonstrated internationally that mangroves act as an effective bio-shield against coastal surges. Mangrove forest restoration was a key intervention under the Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR) project (2016-20) implemented by the MoEFCC in collaboration with United Nations Development Programme (UNDP)-Global Environmental Facility in eight upazilas across five districts, to increase resilience of the coastal community to climate change and enhance their food security. The project promoted coastal livelihoods through development of floating fruit and vegetable gardens and fish²⁴³. Based on the evaluation report of the project, steps will be taken to expand projects of this type over a wider area.

4. Examine and learn from green growth strategies for food and agriculture

The 8FYP is committed to reduction in overuse of chemicals in agriculture, reduce GHG emission, follow GAP and put in place a Green Growth Strategy. As stated in the Plan, Bangladesh will study and learn from UNDP's Green Commodities Program, and the example of other countries (e.g., Rwanda's Green Growth and Climate Resilience National Strategy for Climate Change and Development to establish a low carbon and climate resilient economy by 2050, Chile's National Green Growth Strategy), to support its agenda for green growth. Currently, the country has set targets to reduce GHG emissions in the power, transport and industry sectors. Agriculture is reported to be a leading contributor accounting for 39% of total emissions²⁴⁴. The BCCSAP includes actions to reduce emissions in the agriculture sector (through energy efficiency and water and fertiliser management), and scaling up afforestation and reforestation. The updated Nationally Determined Contribution (2020) under preparation will include a target for reduction in GHG from agriculture, which is currently absent.

5. Operationalise the Climate Fiscal Framework 2020

Building on the CFF 2014, the updated CFF 2020 has broadened its remit to include the role of the private sector, NGOs and CSOs and partnerships for climate finance, and laid out an implementation plan. It takes into account, finance needed for different programmes addressing climate change. The CFF implementation plan will be operationalised in earnest to attract finance from across sectors for climate resilient food systems. Fiscal policies and measures like tax, VAT, subsidy and pricing, and schemes related to lending and insurance will be developed, capacity built and supportive institutional arrangements put in place for their successful implementation. The global investment market will be tapped through schemes such as green bonds, to encourage eco-friendly industries²⁴⁵.

6. Take the lead in addressing climate resilience on the international scene

The country will take the lead in addressing climate resilience at international forums for knowledge sharing, and in leveraging partnerships and funding for action. Bangladesh has assumed the presidency of the 48-nation Climate Vulnerable Forum (CVF) and the Vulnerable Twenty (V20) Group of Finance Ministers. The Mujib Climate Prosperity Plan to mobilise resources for a sustainable future announced in October 2020 is the first plan of the CVF. The South Asia regional office for the Global Center of Adaptation was launched in Dhaka in September 2020. These initiatives will be built on, for bringing international focus on Bangladesh's climate vulnerability and the need for global support and action.

²⁴³ Bangladesh Forest Department. 2018. Integrating Community-based Adaptation into Afforestation and Reforestation (ICBA-AR) Programme in Bangladesh: Co-management and benefit sharing from coastal afforestation

²⁴⁴ USAID. 2016. Greenhouse Gas Emissions in Bangladesh. April.

²⁴⁵ Haq, S. 2021. How do we tap into the global investment market? Are Green Bonds the answer? The Daily Star. 10 March

Cross references:

- NFNSP AoI 1.1.1; 4.2.1; 5.3.2
- CFF 2020
- Nationally Determined Contributions 2020 Interim, MoEFCC
- CIP2 2016-2020
- Bangladesh Climate Change Strategy and Action Plan 2009
- CIP-EFCC 2016-21
- CIP2 2016-2020
- PP2041
- BDP 2100
- 8FYP 2020-2025

Strategy 5.5. Strengthen FNS governance, policy coherence, capacity strengthening and leadership across stakeholders

AoI 5.5.1 Strengthen policy uptake, FNS leadership and institutional capacity of relevant secretariats and public institutions

Rationale

Focusing on FNS secretariats and public institutions, this AoI complements the other AoIs in this strategy on subnational institutions, private sector actors and partnerships. The current FNS institutional structure is strong, but inadequate capacity has hampered analysis and policy implementation.²⁴⁶ Food safety control is hampered by inadequate capacity to lead, technically guide and manage actors with fragmented and overlapping responsibilities. Synergies are not maximized in the interventions of 22 ministries implementing nutrition-sensitive interventions, and leadership and capacity shortfalls limit collaborations with civil society and the private sector on advocacy, service delivery, technology solutions, and nutritious food supply chains.²⁴⁷ Bangladesh needs a stronger uptake of FNS policy into planning organisations, so that policies are better translated into implementations and operations of line ministries and other actors, down to grassroots level. Particularly key are capacities in three institutions with inter-linked mandates, namely the BFSA, BNNC, and FPMU. Strengthening capacity in these institutions would be catalytic because they provide crucial technical services to Bangladesh's FNS governance architecture. Further strengthening of capacities of these institutions are needed to support the wider scope of the NFNSP. Moreover, there is a need to "close the loop on monitoring" so that lessons from Bangladesh's results-based monitoring efforts lead to informed leadership that ensures "course corrections" to align implementation closely to policy goals. Support to the SUN Multi-sectoral Platform that is led by MoHFW needs to continue to enable improved coordination and strengthened linkages between nutrition specific and nutrition sensitive policy frameworks and interventions to help scale up nutrition programmes. Widening active participation in the LCGs which coordinate development assistance, including technical assistance, and include various sector-specific subgroups, would help in the uptake of the PoA by a wider range of actors.

Action Agenda

1. Strengthen capacities of the Bangladesh Food Safety Authority

The Bangladesh Food Safety Act 2013 established BFSA, the National Food Safety Management Advisory Council, and the Central Food Safety Management Coordination Committee. BFSA is crucial for policy uptake and implementation, as it provides technical services to the other two bodies which provide direction, oversight and coordination. BFSA capacity to assume operational responsibility for

²⁴⁶ USAID .2014. Institutional Architecture for Food Security Policy Change: Bangladesh. USAID, Dhaka

²⁴⁷ BNNC (2020). Monitoring Report 2018-19: Second National Plan of Action for Nutrition. Government of Bangladesh

food safety implementation need to be strengthened and coordinated with MoHFW to avoid duplications.²⁴⁸ Accordingly, leadership and institutional capacities are essential to ensure that policies on food safety do indeed become tangible and effective implementations. Attention so far has been on product safety, and more attention is needed for effectiveness in other areas such as field programmes, surveillance and analytical capabilities. BFSA needs to collaborate with 11 or more ministries and hundreds of field units. There is need to make optimal use of the food safety regulatory reforms that Bangladesh has started. Changes must be accompanied by effective facilitation with a focus on outcomes rather than on output. The food safety regulatory reforms should be complemented by adequate manpower who are equipped with appropriate capacities. Periodic trainings on food safety standards, and procedures will be undertaken to build capacity of the agencies entrusted with ensuring safe food.

2. Strengthen capacities of BNNC

The NNP 2015 identified BNNC as lead agency to implement the NPAN2 in collaboration with 22 ministries and departments, under chairmanship of the Prime Minister's Office (PMO), with functions including convening nutrition partners, and coordinating the development, implementation and monitoring of national nutrition policies and programmes. BNNC among other policy functions, has focused on nutrition governance both at national and sub-national level by improving horizontal coordination (across line ministries, platform meetings, executive committee and standing technical committee, SUN Networks, etc.) and vertical coordination (with DNCCs and UNCCs). Strengthening BNNC is needed as the apex body for nutrition in Bangladesh to provide technical support to multistakeholder and multisectoral collaborations as envisaged under NPAN2.²⁴⁹

3. Strengthen capacities of the Food Planning and Monitoring Unit

The FPMU under the MoFood is responsible for providing overall technical and administrative support on FNS in Bangladesh. It is responsible for monitoring the FNS situation in Bangladesh, storing and disseminating knowledge on FNS, and delivering evidence-based policy advice on FNS issues. FPMU serves as the secretariat to the FPMC, which is responsible for providing overall leadership and oversight in all aspects of FNS, under the chairpersonship of the Minister for Food. Efforts need to follow up on strengthening specialist capacity in the different FPMU wings, each of which has specific food security relevant functions, in addition to the overall FNS system support that FPMU provides.

4. Assess and monitor the capacities of the FNS governance system

Whilst BFSA, BNNC and FPMU need specialised capacity strengthening for their specialised technical roles, there is also a need to ensure “the parts add up to the desired whole” of a strengthened FNS governance system. This is needed, for example, to ensure that separate capacity strengthening efforts do not sustain institutional silos, but rather reinforce linkages between each other, and beyond to other organisations working in FNS. In order to do this, a baseline measurement/ assessment of existing capacity of the whole FNS governance system will be done, followed by annual or regular monitoring of capacity gains in key organisations, including BFSA, BNNC and FPMU, but also including actors across the whole FNS system. An independent and technical approach is needed, with strong conceptual framework and indicators suitable for monitoring, with the purpose of sustained and system-wide capacity strengthening.²⁵⁰ The mandate for this role could be potentially assigned to GED, Cabinet Division, IMED or another cross-government body, and could be linked to the government's public administration effectiveness tools, such as the Annual Performance Agreements.

5. Use the FNS CIP Monitoring Reports to annually re-align FNS investments to NFNSP goals

The annual Monitoring Reports (MR) of the FNS-CIP will be better used to identify new projects, and thereby help align the Government's investments more closely to NFNSP goals. The MRs annually

²⁴⁸ FAO. 2017. Bangladesh Food Safety Cluster Evaluation. Office of Evaluation, FAO, Rome

²⁴⁹ Bangladesh National Nutrition Council (2020). Assessment of the Key Bottlenecks for the Coverage of Nutrition Sensitive Interventions and the Underlying Causes. Ministry of Health and Family Welfare, Government of Bangladesh

²⁵⁰ World Bank. 2012. Guide to Evaluating Capacity Development Results; FAO. 2007. Evaluating the Impact of Capacity Building Activities in the field of Food Quality and Safety. FAO, Rome

track both FNS results and project investments.²⁵¹ Currently this information is under used as a forward-looking planning tool. Gaps identified in the MR of the FNS-CIP will be consolidated with the MR of the NPAN2, with coordination between FPMU and BNNC, and this will lead to proposals for annual adjustments to the FNS investments portfolio, which will be channelled to the FPMC for approval. A Public Expenditure Review for Nutrition could be done to update the 2019 report, as part of this process.²⁵² The MR of the FNS-CIP is published around June each year, reporting investment data up to the end of the previous fiscal year, i.e., lagged by one year, and this time-gap could be reduced with more timely data sharing, such as by adapting ERD's AIMS (for development partner projects) and collaborating with Finance Division for data on the Annual Development Program (currently shared through the Annual Development Programme (ADP) book published in April of a given year).²⁵³ This data sharing would be consistent with enhanced Government-to-Government (G2G) services in the e-Government Master Plan for Digital Bangladesh 2019. This is linked to AoI 5.3.1 on FNS data sharing.

6. Broaden participation of Local Consultative Groups (LCG) on Agriculture, Rural Development and Food Security (ARDFS), Disaster Emergency Response (DER) and Health

The LCGs exist to foster coordination between DPs and the Government. This PoA has a broader and more comprehensive multisectoral and multi-stakeholder approach. Consequently, on some issues there may arise need to ensure a stronger and wider participation in the LCG on ARDFS, the LCG on DER, and the Health and Nutrition Consortium which is a health related LCG. Wider and more active participation in the LCGs by civil society and the private sector will be sought. The Health and Nutrition Consortium is updated on FNS but has tended to focus on health issues. It is important to ensure that nutrition related issues are more often brought up for discussion along with funding considerations and investments. The Food Security Cluster deliberations and issues analysed also needs to feed into the LCG process.

Cross references

- e-Government Master Plan for Digital Bangladesh 2019
- NPAN2

AoI 5.5.2. Strengthen the capacities at subnational level including local government, non-state actors and consumer associations by facilitating knowledge exchange and partnerships

Rationale

Local institutions, including government, civil society, private sector and consumer associations, hold key roles in the successful planning, execution and monitoring of FNS projects through their leadership, technical knowledge and partnerships. Whilst successful implementation of the HPNSDP and the NFP-PoA attest to national capacities, subnational/local level capacities are insufficient, particularly to formulate projects, implement them and measure results. In addition, partnerships are weak or lacking, and measures are needed to enhance multisectoral horizontal and vertical coordination, to fully mainstream FNS national frameworks into coordinated actions of all local actors. Partly due to the limited guidance from national authorities, multisectoral coordination is inadequate at district and upazila level.²⁵⁴ Coordination between local government and NGOs occurs mostly out of need since resources are shared, although this is not recognised in financial or programming decisions.²⁵⁵ As part

²⁵¹ Food Planning and Monitoring Unit (FPMU). 2019. Roadmap to the 2020 Monitoring Report of the Second Country Investment Plan on Nutrition-Sensitive Food Systems. Ministry of Food, Government of Bangladesh (with FAO- MUCH Project)

²⁵² Finance Division. 2019. Bangladesh Public Expenditure Review on Nutrition 2019. Ministry of Finance, Government of Bangladesh

²⁵³ Ministry of Finance. 2013. Budget Booklet. Government of Bangladesh

²⁵⁴ Rose, J. & K. Robbins. 2014. Nutrition Governance in Bangladesh: A National and Upazila-level Assessment. Save the Children Technical Report

²⁵⁵ Taylor, L. 2012. "The nutrition agenda in Bangladesh: 'Too massive to handle?'" Analysing Nutrition Governance: Bangladesh Country Report. Institute of Development Studies

of coordination, a clear division of responsibilities is needed to strengthen the interface between local and national government officials, including delineation of the role of NGOs in implementing Government programmes. Initiatives that involve the collaboration of all local stakeholders, including in monitoring progress, are more likely to succeed, and gain sustained technical and financial support. All four actions proposed here relate to strategies and objectives in the Local Government and Rural Development Sector Strategy Paper (2018), National Strategy for Pourashava Governance Improvement 2016-2025, the Upazila Act and the Union Parishad Act. This includes actions to clarify functions and responsibilities, to enhance knowledge and capacity as well as structures for governance and coordination of local actors.

Action Agenda

1. Review and assess the role of local institutions in achieving FNS

Local institutions contributing to FNS need to be mapped and their FNS-relevant activities recorded and categorised according to NFNSP-PoA strategies and initiatives, in collaboration with the umbrella organisation planned under AoI 5.5.4. This will help streamline current efforts, avoid duplication of efforts and exploit synergies through partnerships. The service delivery capacity of different actors will be looked into with the identification of their current/potential engagement. An effort will be made to gauge bottlenecks in their local level operation and management, and their dependence on external state and non-state actors estimated. The role of public offices and local government authorities' and their capacity constraints in supervisory, regulatory and FNS promotional activities will be examined. A clear division of responsibilities, both horizontally and vertically, will be proposed and agreed with key actors.

2. Develop a capacity development plan along with learning resources

FNS development orientation training course design for local leaders, enablers and public officials will be organised. Learning materials, trainers, demonstration resources to appraise sectoral subject matter and cross-sectoral issues will be developed in order to guide and promote non-state or private FNS interventions. Guidance will be supplied on establishing planning, implementation, monitoring and evaluation of local level implementation of national, multi-sectoral, sectoral and locally initiated FNS development efforts. Support will also be provided to assure better function of FNS development networks and establish coordination committees with effecting decision-making process and effective secretarial services and follow up mechanisms for timely implementation of a jointly agreed action agenda.

3. Implement a capacity enhancement strategy for FNS stakeholders including measures to promote partnerships and collaboration

Capacity enhancement activities needed for building synergistic conditions to work with cross-sectoral and sectoral partners in joint implementation of FNS initiatives will be implemented. Workshops and training programmes, including exchange visits, fellowships and human resource time sharing will be organised. Measures will be taken to promote partnerships and collaboration between local stakeholders: government or non-state (civil society and private sector organizations) and consumer associations. Formal communication mechanisms and information exchange facilities amongst participating institutions will be developed and the creation and operationalisation of collaborative platforms explored. A monitoring, evaluation and learning mechanism will be established, with regular reports on actions undertaken to improve service delivery capacity, multi-sectoral coordination and partnership building.

Cross references

- NFNSP PoA: AoI 5.5.4.
- Local Government and Rural Development Sector Strategy Paper 2018
- National Strategy for Pourashava Governance Improvement 2016-2025
- Upazila Act and the Union Parishad Act 1998 (amended 2011)

AoI 5.5.3. Strengthen private sector capacity by promoting the transfer of technologies and knowledge

Rationale

Given the private sector's role at all stages of the FVC, its capacity to contribute to executing the commitments made in the NFNSP and other national strategies is paramount²⁵⁶. The private sector has a crucial role in making food available. Aside from the PFDS, it also handles all trade of agricultural commodities and food and the majority of its processing and marketing. The corporate social responsibility of private companies can be enhanced with regard to healthy product development and marketing, especially in the case of fortified and nutrient-enriched foods (see AoI 2.3.2.) or biofortified seeds (see AoI 1.1.1.). Harnessing new technologies and innovations can potentially offer convenient, cost effective, and scalable solutions. New forms of mechanisation and breeding can help modernise agriculture. New technologies to process and preserve food can lengthen its shelf life, ensure hygienic quality, restoration of nutrients and enable its wider distribution. Building a sustainable food system thus requires that private actors are able to use and access innovative technologies and knowledge in an efficient manner²⁵⁷. Technology and knowledge transfer to private agents must be enabled and promoted, and bottlenecks preventing these transfers from happening identified and removed²⁵⁸. The transmission of knowledge may take place between private sector agents, from the public to the private sector, and nationally or internationally. In particular, public investment in R&D and subsequent transfer of technology and knowledge to private actors is essential where it is likely to produce public benefits and where private agents may not be able or willing to take on such investments, because costs outweigh their potential benefit.

Action Agenda

1. Identify bottlenecks and catalysts of knowledge and technology transfer to the private sector

Transfers to and adoption by the private sector of innovations and new technologies may be thwarted or conversely, encouraged, by a number of factors that need to be identified. These factors depend on the characteristics of different private agents: for instance, where they are placed in the supply chain (farmer, food processor, retailer, etc.), and their size (marginal farmer, supermarket chain, etc.). Economic, structural, behavioural and policy factors may come into play to explain what leads private agents to adopt -or not- new technologies, and this needs to be explored. The lack of property rights on some of the inputs- land in the case of farmers for example- can inhibit untapping the potential of R&D transfers. Exogenous factors can have a role in facilitating knowledge transfer: for example, there is evidence, such as in the aftermath of the Jamuna bridge construction, that improved connectivity facilitates technology adoption. This needs to be investigated. In some cases, market imperfections such as the lack of access to credit (see AoI 1.1.4.), may prevent technology adoption by creating financial barriers. Another element that needs to be understood is how demand from consumers will influence whether actors along the food chain will be willing to adopt more advanced technologies or use new knowledge considering this may imply investments and higher costs. Consumers who are unaware of the importance of food safety and quality, will not be willing to pay the premium associated with these characteristics, giving little incentives to producers to change their ways in order to improve their quality standards. Initiatives such as innovation fairs may be held on a regular basis to facilitate the testing and uptake of technologies developed by academia and by the private sector, and promote funding of further research.

²⁵⁶ Grindatto, G.M. 2018. Ending malnutrition: what role for the private sector? SDG2 Advocacy Hub

²⁵⁷ World Bank. 2020. Promoting Agri-Food Sector Transformation in Bangladesh: Policy and Investment Priorities

²⁵⁸ World Bank. 2004. Transfer of technology to developing countries: unilateral and multilateral policy options. World Bank Policy Research Working Paper 3332.

2. Conduct a policy review

The policy environment also plays a role in creating conditions that are more conducive to knowledge transfers and a comprehensive policy review is therefore needed. The National Science and Technology Policy dates from 2011 and may require updating. Other relevant policy instruments may also affect this area and need review.

3. Enhance access to extension advice through innovations and use of digital technologies

Technology villages will be established in all upazilas (as per AoI 1.5.2 of the NAP PoA 2020). Extension services play a key role in getting information on new techniques and innovations down to farm level. The capacity of extension services thus needs to be strengthened and their knowledge kept updated so that they can propose practical solutions. ICTs are essential for extension service delivery, especially for hard-to-reach users. PPPs may have a role to play given the role of the private sector such as input dealers, in the provision of extension services to farmers. Increasing public-private coordination can help accelerate the dissemination of technologies developed by the public sector and NARS in particular. Promoting cooperatives (as advocated in AoI 1.1.9) can help smaller actors engage more with their suppliers (seed suppliers for example) and with research institutions, in order to benefit from knowledge transfer.

4. Promote international technology transfers (in line with AoI 3.3.4, 3.3.5, 3.3.6 of the NAP PoA 2020)

The Government will actively seek partnerships with other countries in order to promote North-South and South-South technology transfers. CGIAR will be called upon to facilitate these transfers learning from recent successful experiences such as the Hybrid Rice Development Consortium (HRDC), started in 2014, where the International Rice Research Institute (IRRI) and Advanced Chemical Industries Ltd. (ACI) partnered to enhance the dissemination of hybrid rice technology.

5. Improve the investment climate

By creating an environment that is conducive to investment in the agri-food sector, including foreign investment (see AoI 2.2.3), knowledge transfers are likely to increase either directly or through spill overs that will benefit the food system. Bangladesh's ranking in the World Economic Forum's 2019 Global Competitiveness Index is 105th out of 141 countries, leaving much scope for improvement in most of the components of this index (for example on ICT adoption, skills, business dynamism and innovation capacity). This may involve changes in law and regulations. It may also involve public investments such as infrastructure (roads, markets) which will create an environment that is appealing to investors.

Cross references

- NFNSP PoA: AoI 1.1.1.; 1.1.4.; 1.1.9; 2.2.3.; 2.3.2.
- NAP PoA 2020: AoI 1.5.2. Efficient transfer of agricultural technology in each of the districts; AoI 3.3.4. Partnership with CGIAR institutions; AoI 3.3.5. Partnership with international and national organisations; 3.3.6. South-South partnerships

AoI 5.5.4. Establish frameworks for national and subnational FNS stakeholder partnerships to ensure mutual accountability, transparency and effectiveness and operationalise an umbrella organization for the active engagement of stakeholders, especially youth

Rationale

Food systems involve different stakeholders – farmers, industry, government, academia, and NGOs - who by partnering with each other, can help attain the FNS goals of the country. Working together allows greater variety of expertise, perspectives and resources to be pulled in order to achieve common goals. Partnerships can take a host of shapes with their own type of cross-sector collaboration: public-

non-profit, private-private (P2P), public-private, private-non-profit, tripartite, and multi-stakeholder partnerships. They can be subnational, national and international. Bangladesh has long been a pioneer in multi-sector and multi-stakeholder partnerships engaging the government, businesses and civil society as demonstrated in the CIP2 2016-2020 implementation and monitoring. The role of the government is crucial to guiding through policy and legislation but also to investing in goods and services that other stakeholders cannot afford (see AoI 5.5.3). The private commercial sector holds a key role in FNS given the limited public sector resources yet there are still very few ongoing instances of PPPs relevant to FNS. Any partnership will typically involve some degree of risk taking which need to be mitigated by adequate frameworks that can help ensure mutual accountability, transparency and effectiveness.²⁵⁹ Institutions to bring together FNS actors such as the FBCCI or the Bangladesh Supermarket Owners' Association are limited in their scope. While FPMU has been leading a multi-agency government coordination mechanism since the onset of the NFP 2006, there is need for a broader institution that would bring together all FNS stakeholders, including smaller and subnational ones, in order to support and coordinate their work, exploit synergies, avoid duplication of efforts and encourage learning.

Action Agenda

1. Harmonise the understanding of the goals and objectives of the NFNSP

In order to establish an environment where stakeholders want to engage in partnerships in a way that will benefit them as well as contribute to achieving the goals and objectives of the NFNSP, it is important that the understanding of these is harmonised across actors. This requires capacity building and advocacy activities across all sectors of society. Different stakeholders must be sensitised to their social responsibility, especially youth to ensure a long-term impact, while keeping in mind their own purpose and objectives, and how these elements may be reconciled.

2. Establish rules for partnerships, an accreditation system and monitoring

The enabling environment for partnerships needs to be developed. First, rules and obligations in partnerships need to be defined. Second an accreditation system needs to be created to guarantee the standards of the services and goods provided by those in the partnership. Third, standards, effectiveness and efficacy of partnerships will need to be assessed regularly. Establishing this will require cross-government collaboration and partnership in oversight functions. A simple system of coordination through Memoranda of Understanding can be put in place. Partnerships within government institutions often risk being impeded or slowed down by administrative obstruction and the lack of bureaucratic flexibility. It is thus important that for such partnerships, focal point officials be appointed in line ministries and departments to manage coordination and given due authority to act.

3. Raise the profile of the PPP programme and promote increased flow of private investment (as per Strategic Objective 3 of the PPP Authority Annual Performance Agreement (PPPA APA))

In order to specifically encourage public-private partnerships in the field of FNS, efforts will be made to raise the profile of PPPs and incentives will be put in place to encourage private investment that contributes to the NFNSP (see AoI 2.3.3.). A key partner in this should be the Public Private Partnership Authority (PPPA). A legal and regulatory framework as per the Public-Private Partnership Act 2015 will be developed in order to build confidence among private investors by delineating the rights of both the government and private companies, and thus reassure the public and private investors against conflicts of interest. The Public-Private Partnership Act 2015 endeavours to facilitate the development of the country's core sector public infrastructure and services. The 2020-21 Budget plans revisions to it to further promote this type of partnerships. This provides a legal regime to facilitate private investment.

²⁵⁹ Institute of Medicine (US). 2012. Building Public-Private Partnerships in Food and Nutrition: Workshop Summary. Washington DC: National Academies Press (US); Why Partner?

A Policy for Implementing PPP Projects through Government to Government (G2G) partnership was also approved in 2017 to build on strong bilateral relationships with other Governments. Guidelines, rules, regulations, procedures and office orders must be established as foreseen in the PPP Act 2015, in order to effectively manage such collaborations in a way that will render them a usual modus operandi within the government rather than an exception. Efforts should be made to limit the weight of bureaucracy in establishing partnerships so as to not hinder potential partnerships. Experience from other countries should be drawn upon in specific areas. For example, PPPs towards FLW reduction and food waste recycling are common in Asia-Pacific economies.

4. Expand cooperation with NGOs, especially for nutrition services

The widespread networks of NGOs, even in remote areas, constitute a tremendous asset for the country, whose potential must be exploited further through collaboration within established rules. The Bureau of NGO Affairs will continue to play a major role in scaling up the service delivery across the country. For particular areas of FNS such as nutrition services, partnership with NGOs will be critical to expand the reach of community clinics in rural areas. These partnerships are also critical in urban areas to address urban nutrition, with targeted emphasis on slum areas. A community-based mechanism linked with government service delivery programmes and structures and private sector linkages will be developed.

5. Establish and operationalise an umbrella organization

An umbrella organisation that can bring together multitude of actors or groups into cohesive entities is required to streamline the diverse efforts taking place in the country to try and tackle the causes and underlying factors of food and nutrition insecurity. This involves all the ministries working on FNS, NGOs, academia, research institutions, other CSOs, and the private sector, both at subnational, national and international levels. This will require careful thinking and consensus on the best setup in terms of purpose and role, size, location, structure, role and governance arrangement of this organization. While choices will need to be made with regards to the scope of the work of this institution given the breadth the issue of FNS, one of its important roles will be to actively engage stakeholders such as associations, clubs, foundations, platforms and other institutions, especially youth. The role and engagement of the FBCCI will be key for instance which need to be strengthened. Resources will be allocated for the setup of this institution and its operationalisation. Mechanisms to ensure regular and durable funding will need to be put in place to ensure it is able to commit to long-term endeavours.

Cross references

- NFNSP PoA: AoI 2.3.3.; 5.5.3.
- Bangladesh Public-Private Partnership Act 2015
- Policy for Implementing PPP Projects through Government to Government (G2G) Partnership 2017
- PPPA APA 2018-2019 Strategic Objective 3

7. NFNSP Plan of Action Matrix

This section consists of matrices corresponding to each one of the Aols for which narratives were provided in the previous chapter. This is preceded by goal and outcome level indicators towards the monitoring exercise.

GOAL LEVEL

NFNSP Goal: Improve the food and nutrition security status to the level needed to achieve the Food and Nutrition Security (FNS) relevant SDG targets and fulfill related national and international commitments by 2030		
Indicators	Target	Means of verification
Prevalence of Undernourishment (PoU) (SDG indicator 2.1.1.)	12% by 2025 10% by 2030 (as per SDG Tracker)	FAO, SOFI and FAOSTAT
Prevalence of moderate and severe food insecurity in the population, based on the Food Insecurity Experience Scale - FIES (SDG indicator 2.1.2)	Decreasing over time (FAO)	FAO, SOFI and FAOSTAT
Prevalence of stunting (height for age <-2 SD from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age (SDG indicator 2.2.1)	20% by 2025 (baseline 30.8% in 2017-18) 15.5% by 2030 (as per SDG Tracker)	BDHS, SID/BBS
Prevalence of wasting among children under 5 years of age (<-2 SD of weight for height) (SDG indicator 2.2.2)	7% by 2025 (baseline 8.4% in 2017-18) Less than 5% by 2030	BDHS, SID/BBS

OBJECTIVE LEVEL

Objective	Indicators	Target	Means of verification
1.To ensure availability of safe and nutritious food for healthy diets	<ul style="list-style-type: none"> Rice import dependency (import/availability) Agricultural sector GDP growth rate (%) <ul style="list-style-type: none"> a) Crop and horticulture b) Fisheries c) Livestock d) Forestry Share of non-rice value added in total food value added in current price 	<ul style="list-style-type: none"> 0% (baseline 3.5% for 2018/19) 3.9% in 2025 (baseline 3.9% in 2018/19) <ul style="list-style-type: none"> a) tbd b) tbd c) tbd d) tbd Increasing 	<ul style="list-style-type: none"> FPMU, MISM, BBS BBS BBS
2.To improve access to safe and nutritious food at an affordable price	<ul style="list-style-type: none"> Average annual CPI inflation rate Change in agricultural wage rate of male agricultural labourers (without food) SDG 2.c.1: Change in Indicator of Food Price Anomalies (IFPA for rice) 	<ul style="list-style-type: none"> 4.60% by 2025 as per 8FYP (baseline 5.7% for 2019/20) 7.8% by 2025 (per capita real GDP growth rate + 0.5)²⁶⁰ Stable: 0.5 SD of mean (baseline -1.1²⁶¹ in 2018/19) 	<ul style="list-style-type: none"> Bangladesh Bank Bangladesh Bank/ DAM/ BBS FAO
3.To enhance the consumption and utilisation of healthy and diversified diets for achieving nutrition improvements	<ul style="list-style-type: none"> National DEI from cereals Proportion of households consuming adequately iodised salt (i.e., containing at least 15 ppm) Proportion of women with minimum dietary diversity (using MDD-W) % of children aged 6-23 months receiving MAD Proportion of population using safely managed drinking water services (in line with 8FYP and SDG 6.1.1) 	<ul style="list-style-type: none"> 56% by 2030 as per desirable intake in the national FBDG (baseline 66% in 2016) 90% by 2025 as per NPAN2 (baseline 50.5%) 75% by 2030 as per NPAN2 (baseline from FSNSP 2015: 46%) More than 40% by 2025 as per NPAN2 (34% in 2017/18) 100% by 2030 as per SDG Target 6.1 (47.9% in 2019) 	<ul style="list-style-type: none"> HIES, BBS National Micronutrient Survey/ Health Bulletin (MoHFW), MICS (BBS), MoInd TBD, NIPN, FAO Ad hoc survey BDHS SDG tracker (MICS BBS)
4.To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions	<ul style="list-style-type: none"> Proportion of population living below national poverty line Ratio of income of top 10% population and bottom 10% population Budget allocation for social protection for the poor (excluding civil service pensions) 	<ul style="list-style-type: none"> 12% by 2025 and 7% by 2030 (baseline 20.5% estimate for 2018/19) 20 by 2030 (baseline 37.8 for 2016) 2% of GDP by 2025 as per 8FYP (baseline 1.2% in 2018/19) 	<ul style="list-style-type: none"> SDG National Priority Target 2, SDG Tracker SDG National Priority Target 28, SDG Tracker MoF

²⁶⁰ According to the 8FYP, the GDP growth rate is projected at 8.51% in 2025. Factoring in the projected population growth rate (1.18%), the target is computed as: $1.18 + 0.5 = 7.8\%$

²⁶¹ Calculations based on the [FAO-GIEWS methodology](#).

<p>5. To Strengthen cross-sectoral food and nutrition security governance coordination, capacity building and partnership for effective policy implementation</p>	<ul style="list-style-type: none"> • Number of annual high level FNS policy reports produced (e.g., NFNSP Monitoring Report, NPAN 2 Monitoring Report, SUN Annual Report) • Number of certified foods /food products certified as per mandatory standards by BSTI • Food Waste and Loss Index • Proportion of SDG FNS-relevant indicators available²⁶² • Allocation for climate resilience and gender mainstreaming across ministries - MoA, MoFL, MoFood, MoWCA, Health Services • Number of meetings of the LCGs on FNS (ARDFS, DER and Health) 	<ul style="list-style-type: none"> • At least 2 per year (baseline 18/19: 2) • Increase (baseline 72 in 2018/19) • Decline • 100% (baseline 47% in 2021) • Increase Baseline 2020/21: <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 20px;">gender</td> <td>climate</td> </tr> <tr> <td>3.9%</td> <td>37.1%</td> </tr> <tr> <td>31.4%</td> <td>30.5%</td> </tr> <tr> <td>3.4%</td> <td>2.9%</td> </tr> <tr> <td>58.1%</td> <td>12.9%</td> </tr> <tr> <td>2.7%</td> <td>2.7%</td> </tr> </table> • At least 3 per year for each relevant LCG (baseline: 8 in 2020/21) 	gender	climate	3.9%	37.1%	31.4%	30.5%	3.4%	2.9%	58.1%	12.9%	2.7%	2.7%	<ul style="list-style-type: none"> • FPMU monitoring • BSTI • MoFood, BBS • SDG tracker • Climate Budget and Gender Budget, MoF • FPMU
gender	climate														
3.9%	37.1%														
31.4%	30.5%														
3.4%	2.9%														
58.1%	12.9%														
2.7%	2.7%														

²⁶² For this indicator, the availability of the 19 SDG indicators listed in FAO's 2019 Tracking progress on food and agriculture-related SDG indicators is considered. As of April 2021, 9 are available i.e., 47% of 19.

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 1: To ensure availability of safe and nutritious food for healthy diets						
Strategy 1.1 Increase productivity while ensuring sustainable production of cereals and nutritious food including horticulture, fisheries and livestock						
1.1.1. Develop improved climate-smart technologies for productivity gains, agricultural diversification, sustainable intensification, and enhancement of nutrient content	<p>1. Develop stress-tolerant high-yielding varieties of major cereals and nutrient-dense crops such as pulses, oilseeds, soybeans, fruits and vegetables (in line with NAP PoA 2020 Programme 1.1. and 3.2)</p> <ul style="list-style-type: none"> • Support and leverage work of research institutes • Emphasise development of stress-tolerant rice varieties suited specific geographies & farming conditions • Continue developing improved varieties of rice, legume and pulses that are nutrient-rich • Encourage research in private firms 	ST- LT	<ul style="list-style-type: none"> • New improved breeds of livestock and fish • 5% area under biofortified crops by 2025 (as per NAP PoA 2020 target) 	<ul style="list-style-type: none"> • n. of new improved crop varieties • n. of new improved breeds for livestock and fish • Share of area under biofortified crops over total cultivated area 	<ul style="list-style-type: none"> • MoA and MoFL reports 	<ul style="list-style-type: none"> • MoA • MoFL • BARC and the 10 NARS institutes • Agricultural Universities • CIMMYT • BWMRI • ICRISAT • Harvest Plus • Private sector • DPs • NGOs
	<p>2. Improve crop, soil and natural resources management practices including mechanization and “high tech” options to ensure high productivity and sustainability (cross-reference to AoI 1.1.5.)</p> <ul style="list-style-type: none"> • Continue developing crop, water, soil and natural resource management options adapted to different agro-ecology of Bangladesh • Increase efficiency of input use through “high-tech” approaches • Encourage investments for development of resource and energy efficient agricultural machinery • Customise equipment to the specific needs of farmers (in line with NAP PoA 2020 Programme 2.2.1) 	ST- LT				
	<p>3. Develop of improved breeds of livestock and fish and improved husbandry practices</p> <ul style="list-style-type: none"> • Apply science-led modern breeding methods • Improve management systems • Support and leverage BLRI’s work • Develop local adapted breeds of livestock into high-yielding breeds • Develop an indigenous gene fish bank 	ST- LT				
	<p>4. Develop biofortification to increase the nutrient-density of major food items (see AoI 1.1.2.)</p>	ST- MT				
1.1.2. Disseminate improved technologies and practices at farmer and farm level	<p>1. Strengthen capacities of extension workers to better meet priorities</p> <ul style="list-style-type: none"> • Map EAS needs • Train extension workers on priority topics • Develop multidisciplinary extension skills across livestock, fisheries, and crops • Strengthen nutrition-sensitivity in extension service 	ST	<ul style="list-style-type: none"> • Farmers, including poor farmers, women, and youth, have access to improved EAS 	<ul style="list-style-type: none"> • n. of female extension workers • n. of farmers trained on sustainable practices by DAE 	<ul style="list-style-type: none"> • DAE, DLS and DoF reports 	<ul style="list-style-type: none"> • MoA-DAE, DAM, BADC, AIS • MoFL-DLS, DoF, BLRI
		ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
through effective and participatory extension services	<p>2. Increase inclusion of poor farmers, women and youth in extension services</p> <ul style="list-style-type: none"> Strengthen inclusion measures Recruit more female extension workers 	ST- LT		(CIP2 indicator), DLS and by DoF		<ul style="list-style-type: none"> BARC, SRDI and other NARS institutes Private sector FAO and other DPs NGOs and INGOs
	<p>3. Strengthen demand-led extension services</p> <ul style="list-style-type: none"> Promote decentralized and local-level planning Mainstream participatory extension approaches Strengthen Agricultural Technical Committees 	ST- LT				
	<p>4. Strengthen public-private-NGO partnerships</p> <ul style="list-style-type: none"> Monitor and advise on EAS in contract farming Train NGOs and private sector to deliver higher quality EAS Strengthen coordination role of Agricultural Extension Planning Committees 	ST- LT				
	<p>5. Enhance the use of ICT</p> <ul style="list-style-type: none"> Expand e-agriculture and FIACs Expand use of audio-visual and mass media Expand use of ICT in MIS and knowledge management Strengthen capacity of EAS workers on ICT use 	ST- LT				
1.1.3. Expand and promote the use of water-efficient and environmentally friendly alternative irrigation technologies, including surface irrigation	<p>1. Increase surface water usage, enhance water conservation and increase water use efficiency (in line with NAP PoA 2020 Key Area of Intervention 1.2.2 and CIP2 Programme 1.2)</p> <ul style="list-style-type: none"> Integrate rainwater with hydroponic cultivation Build new reservoirs and repair old ones; develop suitable storage Disseminate irrigation methods that consume less water In water scarce areas, promote drips and micro-irrigation Adapt approaches to regional characteristics e.g. portable irrigation in <i>char</i> areas (NAP PoA 2020 Key AoI 1.4.4). Focus on rainfed <i>aus</i> and <i>aman</i> rather than irrigation intensive <i>boro</i> rice Conserve rainwater for irrigation in cases of drought Protect forest and encourage tree planting 	ST- MT	<ul style="list-style-type: none"> Entire country is covered by water saving technology for irrigation (as per NAP PoA 2020) 25% reduction in diesel pump sets by 2022 followed by 50% in 2025 & 75% by 2030 (in line with NAP PoA 2020) 	<ul style="list-style-type: none"> Arable land under surface irrigation (as per NFP CIP2) Water-use efficiency (as per NFP CIP2) % of diesel pumps 	<ul style="list-style-type: none"> MoLGDRRC reports MoWR reports 	<ul style="list-style-type: none"> MoLGDRRC-LGED MoWR-BWDB, WARPO MoA-BMDA, BADC, DAE PMO- PPPA Agricultural Universities Private sector DPs NGOs, INGOs
	<p>2. Develop and promote new technologies and infrastructure</p> <ul style="list-style-type: none"> Collaborate with private sector R&D; learn from other countries' experience e.g., precision irrigation using sensors, ICT-based and digital solutions Disseminate these new technologies Continue large infrastructure projects to ensure countrywide irrigation e.g., excavation and re-excavation of canals and rivers 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>3. Facilitate access to sustainable irrigation technology</p> <ul style="list-style-type: none"> Expose farmers to sustainable technology; provide financing for necessary investments (in line with AoI 1.1.4); promote formation of groups and cooperatives (in line with AoI 1.1.9) for better access to infrastructure and more effective maintenance and management (PP2041) Focus on rural women's access and participation to irrigation Favour access to clean and sustainable technologies e.g., solar powered irrigation pumps (in line with NAP PoA 2020 Key AoI 2.2.2.) 	ST- LT				
	<p>4. Adjust incentives to promote clean, efficient and sustainable irrigation (see AoI 1.1.5)</p>					
1.1.4. Improve timely access to credit including micro-credit, to small-scale producers through suitable institutional reforms	<p>1. Develop of agricultural credit service in a timely manner for the poor, marginalized and small-scale producers through the formal banking system</p> <ul style="list-style-type: none"> Expand formal agricultural credit to the poor, marginalized and small-scale producers in timely manner Review the definition of farmer to include farmers so far excluded (e.g. those rearing livestock, honey bees, cultivating mushrooms etc.) so that they can avail credit from banks (as per NAP PoA 2020 Key AoI 1.6.1.2) 	ST- MT	<ul style="list-style-type: none"> Adequate credit supply to meet emerging demand 50% of Krishok Credit Card distributed by 2022 and rest by 2025 (as per NAP PoA 2020 1.6.1.2) Increase in average MFI loan size 	<ul style="list-style-type: none"> n. of formal banks providing direct agricultural credit services Proportion of loans for marginalized farmers n. of "Krishok Credit card" provided 	<ul style="list-style-type: none"> Bangladesh Bank report Krishi Bank reports BBS Reports MoA reports 	<ul style="list-style-type: none"> MoA- DAE MoP- BBS MoC Bangladesh Bank PKSF BRDB PDBF Krishi Banks MFIs and Non-Bank Financial Institutions
	<p>2. Introduce "Krishok Credit Card" agent banking and mobile financial services for the agricultural sector (as per NAP PoA 2020 Key Area of Intervention 1.6.1.2)</p> <ul style="list-style-type: none"> Provide bank account and "Krishok Credit Cards" to all farmers with special emphasis on women (NAP PoA 2020 1.6.1.2 and 2.4.4.) Introduce and expand agent-banking and Mobile Financial Service where the formal Bank branch are not reaching out 	ST				
	<p>3. Reduce interest rate of microcredit services and increase grace period of loan repayment with commodity specific calendar</p> <ul style="list-style-type: none"> Increase average loan size of the MFIs for agricultural credit Adapt repayment timing to crop calendar Increase grace periods for the loan repayment Maintain the lower interest rate set by the Central Bank 	ST/ MT				
	<p>4. Institutional reform in the service provision</p> <ul style="list-style-type: none"> Develop pro-poor credit disbursement modalities for agricultural, its value chain sector, Provide credit for poor and vulnerable people in adverse climatic situations Strengthen all Krishi Banks, BRDB, PDBF for providing agricultural and rural credit 	ST MT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
1.1.5. Improve input use efficiency for productivity gains, sustainability, and health and environmental protection	1. Develop and disseminate knowledge-intensive technologies and practices <ul style="list-style-type: none"> • Increase overall agricultural R&D expenditure (as per AoI 1.2.3.) • Increase investments in crop and natural resources management research (in line with NAP PoA 2020 Programme 3.2.1) • Develop farmers' capacity to process location-specific information and adjust their management practices to suit the conditions • Refine and expand currently available technology such as soil test-based application of fertilisers, use of organic fertilisers, IPM, alternate wetting and drying method of irrigation, online advisory systems (in line with the NAP PoA 2020 Key AoI 1.2.1. and 1.2.2). • Encourage use of bio-fertilisers and bio-pesticides (in line with the NAP PoA 2020 Key AoI 1.1.1). • Promote "high-tech" systems such as nano-technologies, mobile software-based monitoring and field-embedded monitoring sensors • Develop quality seeds (as per NAP PoA 2020 Key AoI 1.1.3) and train farmers on how to produce and store quality seeds • Strengthen capacities of BRRI and BINA for producing seeds • Promote the production of quality seeds of selected regional and ethnic foods (see AoI 12.1). • Develop improved knowledge-intensive management technologies suited to various crops and agro-ecological zones 	ST- MT ST- LT MT- LT	<ul style="list-style-type: none"> • Improved fertiliser efficiency and soil fertility • Reduced dependence on import of quality seeds from overseas by 2025 (as per NAP PoA 2020 AOI 1.1.3) • Savings on fertiliser, water & energy (as per NAP PoA 2020) 	<ul style="list-style-type: none"> • Fertiliser efficiency • Soil fertility • Annual change in improved rice, wheat and maize seeds production (CIP2) 	• MoA reports	<ul style="list-style-type: none"> • MoA- DAE, SCA • MoFood- FPMU • MoL- DLRS • BARC and other NARS institutes • AUs • KGF • Private sector • DPs • NGOs, INGOs
	2. Carry out policy reforms to incentivise clean, efficient and sustainable technologies and practices at scale <ul style="list-style-type: none"> • Review fertiliser subsidy • Review cost structure of irrigation water (in line with the NAP PoA 2020 Key AoI 1.2.2) and regulatory frameworks to adjust pricing water and electricity pricing policies (in line with the Bangladesh National Conservation Strategy 2016) 	ST- MT				
	3. Improve access to land and water bodies and ensure their efficient use <ul style="list-style-type: none"> • Continue digital land zoning and efforts to establish land rights especially for the most vulnerable groups, with a special focus on women • Include availability of land for salt production • Ensure access to jheels, common waterbodies and land and address social equity issues 	ST- LT				
1.1.6. Promote the production of quality feed and fodder	1. Carry out R&D (cross-cutting with 1.1.1.) <ul style="list-style-type: none"> • Develop supplementation strategies to complement nutritional content of feed • Improve techniques used by smallholders to make their own feed 	ST- MT	<ul style="list-style-type: none"> • Increase in feed production • Adequate supply to respond to 	<ul style="list-style-type: none"> • n. of feed producers registered by the MoFL 	• MoFL reports	<ul style="list-style-type: none"> • MoFL-DLS, DoF, BFRI, BLRI

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification ^e	Responsible actor and stakeholders
through appropriate support to feed and fodder industries for fisheries and livestock	<ul style="list-style-type: none"> Investigate the possibility and economic feasibility of using non-conventional feed resources - see AoI 5.2.1 Develop high yielding and resistant maize and soybean varieties for feed Develop fodder conservation practices, particularly hay and silage to enable a stable supply of feed throughout the year Continue to develop low-cost aquaculture feeding approaches 	MT- LT	seasonal changes in demand	<ul style="list-style-type: none"> Creation of an inventory of existing feeding systems across the country and throughout the year 		<ul style="list-style-type: none"> MoA-DAE, BARC MoP- BBS MoInd- BSTI MoFood- BFSA MoF MoC Associations of feed importers Chamber of commerce for feed industries Private sector involved in the sale of feed DPs NGOs, INGOs
	<p>2. Develop extension to introduce and expand use of new and alternative approaches</p> <ul style="list-style-type: none"> Expand cultivation of HYV fodder training/preservation techniques and tools Enhance forage production through means such as the integration of forage with crop cultivation, tree plantation, use of embankments, roadsides, etc. Encourage the use of aquatic plants especially water hyacinth as animal feed Promote floating aquaponics for fodder production in <i>haor</i> and <i>char</i> areas Increase area under maize cultivation, especially quality protein maize Maximise the use of available feed resources (agricultural and agro-industrial by-products, natural pastures and browse) Complement with appropriate supplementation of poor-quality pasture 	ST- MT				
	<p>3. Manage the feed and fodder sector</p> <ul style="list-style-type: none"> Carry out a feed inventory across the year and regions Continue registering feed producers and sellers Organise dialogues between public and private sector involved in the feed and fodder industry Carry out bilateral import negotiations for feed and feed inputs Establish a fodder and feed bank and fodder seedbank/germplasm at district level Synchronize production/ needs of animals and production of feed & fodder Create a single regulatory agency to coordinate all actors involved Promote collaboration between stakeholders e.g., livestock departments and municipalities which collect waste, some of which may be used as cattle feed 	ST- MT				
	<p>4. Ensure quality and safety</p> <ul style="list-style-type: none"> Increase testing on fish, livestock and poultry feed Inspect of farms/feed mills/hatcheries to enforce of livestock feed law Develop and disseminate storage for feed and fodder Build infrastructure/ strengthen capacities to develop quality feed & fodder 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>5. Promote the development of the food industry</p> <ul style="list-style-type: none"> • Enable financing for private sector involved in the food sector • Ensure stable electricity and gas supply for the food industry • Identify opportunities for reducing taxation of raw materials for feed • Consider anti-oligopoly regulations • Identify evolving needs of the sector through a regular review 	<p>ST-LT</p> <p>MT-LT</p>				
1.1.7. Stimulate the blue economy by promoting the sustainable development of marine fisheries and aquaculture in coordination with other non-agricultural uses and the private sector	<p>1. Support a coordinated policy planning process towards the Blue Economy in Bangladesh</p> <ul style="list-style-type: none"> • Develop common approach and exploit synergies (cost-sharing of common infrastructure, cross-fertilisation of technology and innovation) • Seek active participation of stakeholders <p>Reinforce role of Blue Economy Cell of the MoPEMR</p>	ST-LT	<ul style="list-style-type: none"> • Multisectoral Blue Economy policy is produced and operationalised 	<ul style="list-style-type: none"> • Share of sectoral contribution to Ocean/Blue Economy sectors (creation of an "Ocean Account") 	<ul style="list-style-type: none"> • BBS Ocean Account 	<ul style="list-style-type: none"> • MoFL • MoP- BBS, Blue Economy Cell, Planning Commission • MoPEMR- Blue Economy Cell • MoC • Ministry of Shipping- Mercantile Marine Office • Chittagong Port Authority and Customs • MoFA • MoFL- DoF • MoHA- Coast Guard • National Port Authority • World Bank, FAO • Fishers' and boat-owners' associations
	<p>2. Estimate the potential contribution of the Blue Economy</p> <ul style="list-style-type: none"> • BBS to create an "Ocean account" • Transform this account into a Blue Economy account at a later stage 	MT-LT				
	<p>3. Assess stocks and develop national fishery management plans</p>	ST-LT				
	<p>4. Enable investment in sustainable fisheries</p> <ul style="list-style-type: none"> • Strengthen fishery policies, regulatory frameworks and institutional capacity • Conduct awareness-raising programmes 	ST-LT				
	<p>5. Develop a Monitor Control and Surveillance system and reduce Illegal Unregulated and Unreported (IUU) fishing</p>	ST-LT				
	<p>6. Improve infrastructure and production practices</p> <ul style="list-style-type: none"> • Improve infrastructure for capture and culture fisheries • Develop value chains and food safety <p>Boost coastal aquaculture productivity</p>	ST-LT				
	<p>7. Sustain community empowerment and livelihoods</p> <ul style="list-style-type: none"> • Carry out adaptive research, training and extension activities • Support fishing community institutions and alternative livelihoods development • Business development and market linkages for alternative livelihoods, with a focus on young women and men. 	ST-LT				
1.1.8. Develop and promote eco-friendly and	<p>1. Formulate and implement an Outbreak Investigation and Response Strategy Plan and Standard Operating Procedures (in line with Output 2.2.</p>		<ul style="list-style-type: none"> • Functional Outbreak Investigation 	<ul style="list-style-type: none"> • n. of Outbreak Investigation and Response 	<ul style="list-style-type: none"> • MoHFW report on contagious diseases 	<ul style="list-style-type: none"> • MoFL • MoHFW • MoA

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
responsible practices for animal health along the principles of "One Health"	<i>under Outcome 2 and Component 2 of the One Health Strategic Framework and Action Plan)</i> <ul style="list-style-type: none"> • Conduct joint risk analysis and develop a joint action plan that links the plan to the National Disaster Management Plan • Make budgetary allocations for coordinated outbreak response • Ensure coordination for outbreak preparedness and response, especially at the operational level • Enhance investigation and response collaborations between human and animal health sectors, environmental sector 	ST ST-LT	and Response Strategy Plan and Standard Operating Procedures <ul style="list-style-type: none"> • "One Health" communication strategy in place across the country • Effective vaccine supply chain 	committees in each division, and districts <ul style="list-style-type: none"> • Public budgetary allocation every year for conducting risk and outbreak analysis • n. of doses of vaccines produced (CIP2 indicator) 	• Sector-wise national budget	<ul style="list-style-type: none"> • MoEFCC • MoFood • NGOs, INGOs • DPs
	2. Develop a communication strategy for "One Health" <ul style="list-style-type: none"> • Develop a strategy with specific focus on zoonotic diseases • Establish processes to enable individuals and communities to develop the knowledge, attitudes and skills for protecting their health, livelihoods and ecosystems against diseases 	ST-MT				
	3. Develop a standard supply chain for vaccines with robust inventory management <ul style="list-style-type: none"> • Build standard supply chain for vaccines using international standards and strict enforcement • Build adequate infrastructure and capacities to prevent counterfeiting, tampering, contamination and theft, and ensure quality • Consider possibility of having community-based animal health workers (as suggested in the CSAIP) • Develop track and trace system to improve planning and inventory management and minimise waste 	ST-MT				
1.1.9. Strengthen the role of producers' organizations and cooperatives in reducing the cost of production, improving market access, and increasing the prices received by producers	1. Ease the registration process <ul style="list-style-type: none"> • Develop easy and fast registration process of the PO and cooperatives • Develop a digital registration process 	ST	<ul style="list-style-type: none"> • Effective and more diverse producers' organization and cooperatives for agricultural production, value addition, and market development 	<ul style="list-style-type: none"> • n. of agriculture-related government sponsored cooperative societies • n. of agriculture-related self-initiated cooperative societies 	<ul style="list-style-type: none"> • Department of Cooperatives Reports 	<ul style="list-style-type: none"> • MoLGR&C-RDCD, DoC • MoA-DAE BARC • MoFL- DLS, DoF, BLRI, BFRI • MoP- BBS, BSTI • MoFood- BFSI • MoF • MoC • SME Foundation
	2. Increase financial services <ul style="list-style-type: none"> • Increase the number of credit and insurance services for PO and cooperatives • Easy and low interest access to financial services • Increase financial literacy training 	ST				
	4. Training and capacity building <ul style="list-style-type: none"> • Carry out training and capacity development program for improving organization's internal structure, better management, and information flow • Improve capacity to negotiate and develop proposals 	ST				
	5. Provide diversified support <ul style="list-style-type: none"> • Increase and adapt support to rural POs and cooperatives • Establish market connection and economic opportunities for PO and cooperatives 	ST	<ul style="list-style-type: none"> • Integration of PO and cooperatives in the R&D process 			<ul style="list-style-type: none"> • Private sector • NGOs, INGOs • DPs

Area of Intervention	Activities	Time frame	Targets	Indicators (input and output)	Means of verification	Responsible actor and stakeholders
OBJECTIVE 1: To ensure availability of safe and nutritious food for healthy diets						
Strategy 1.2 Scale up nutrition-sensitive diversification of food production						
1.2.1 Promote diversification into horticulture, fisheries, livestock, poultry and dairy products with high nutrient and micronutrient content including regional and ethnic foods	1. Develop and disseminate improved production technologies for non-cereals crops and animal source food (see AoI 1.1.1.) <ul style="list-style-type: none"> Exploit complementarity among production activities e.g., grow leguminous catch crop that takes advantage of residual soil moisture and nitrogen after rice harvest; use poultry manure to supplement fertilisers. 	ST- MT	<ul style="list-style-type: none"> Increase in production of horticulture, fisheries, livestock, poultry and dairy products Increased consumption of nutrient - dense regional and ethnic foods 	<ul style="list-style-type: none"> Production of selected horticulture, fisheries, livestock, poultry and dairy products (CIP2 indicator) Production of selected ethnic and regional foods in major crops' production 	<ul style="list-style-type: none"> Agricultural Census Reports BBS 	<ul style="list-style-type: none"> MoA- DAE, BARC, BARI, BINA MoFL, BLRI, BFRI MoCHTA AUs CIMMYT, ICRISAT Private sector NGOs, INGOs DPs
	2. Reduce risk through promotion of contract farming (see AoI 2.1.1.) <ul style="list-style-type: none"> Design regulations to ensure transparency, fairness, and enforceability of such contracts 	ST- MT				
	3. Invest in marketing, storage, and processing infrastructures for facilitating rapid access to markets while minimizing the losses in transit (see AoI 2.1.1.) <ul style="list-style-type: none"> Create public goods such as farm-to-market road, establishing and regulating local market yards, and promoting private sector investments through public-private partnerships, credit support and regulatory support 	ST- LT				
	4. Establish agricultural marketing information systems (see AoI 2.2.5.) <ul style="list-style-type: none"> Ensure the existence of efficient agricultural marketing information system Favour ICT-based approaches 	ST- MT				
	5. Promote the cultivation of regional and ethnic foods (in line with NPAN2 6.2.1 and following NAP PoA 2020 Program 1.4) <ul style="list-style-type: none"> Identify regional and ethnic foods that are particularly nutrient-dense Promote the production of the above through FBDG Document nutrient composition of such foods in FCTs Collect and conserve germplasm of prioritized foods 	ST ST- MT				
	<ul style="list-style-type: none"> Exploit genetic diversity in breeding programmes for developing HYVs with tolerance to biotic and abiotic stresses 	MT- LT				

1.2.2. Increase funding and improve efficiency of R&D for sustainable agriculture	<p>1. Boost budget allocation for public sector R&D (in line with NAP PoA 2020 Programme 3.1)</p> <ul style="list-style-type: none"> • Boost in budget allocation for the public-sector R&D • Direct funding to priority areas • Develop capacities to carry out research with special emphasis on advanced and novel fields notably in academia • Carry out policy reforms to incentivise private sector investments, especially in proprietary technologies such as the development of hybrid varieties of nutrient-dense vegetables and fruits 	ST- LT MT- LT	<ul style="list-style-type: none"> • 20% increase in agriculture R&D budget per year for the next five years (as per NAP PoA 2020 Programme 3.1) • Increased funding to agricultural regional research centres in hills, <i>char</i>, Barind, <i>haor</i> and coastal areas 	<ul style="list-style-type: none"> • Budget allocations for public sector R&D in agriculture • Funding to agricultural regional research centres in hills, <i>char</i>, Barind, <i>haor</i> and coastal areas 	<ul style="list-style-type: none"> • MoA Reports • MoF budget • Annual Report of NARS institutes 	<ul style="list-style-type: none"> • MoA • MoF • BARC and other NARS institutes
	<p>2. Promote R&D funding for non-staple nutrient-dense agricultural products</p> <ul style="list-style-type: none"> • Redress imbalance in the allocation of research funding to staple cereals vis-à-vis nutrient dense agricultural products • Promote nutrient-sensitive diversification by increasing the R&D support for developing improved technologies for the production of nutrient-dense foods • Increase support to regional research centres in hills, <i>char</i>, Barind, <i>haor</i> and coastal areas 	ST- LT				
	<p>3. Carry out institutional reforms in the NARS</p> <ul style="list-style-type: none"> • Accelerate institutional reforms to increase efficiency and effectiveness • Strengthen human resource development by (a) sponsoring more researchers for advanced degrees; (b) focusing the training programs in new high potential areas such as biotechnology, geographic information systems, nano-technology and ICT; and (c) building a stronger linkage between research institutes and agricultural universities • Continue research capacity strengthening efforts of the National Agricultural Technology Project (NATP) (see AoI 5.5.3). 	ST- MT ST- LT				
1.2.3. Improve the availability of safe nutritious food through innovation and expansion of appropriate methods of urban-based food production	<p>1. Expand rooftop gardening</p> <ul style="list-style-type: none"> • Provide incentives to households or businesses (e.g. tax incentives) • Set up demonstrations in cities on roof gardening (see NAP PoA 2020 AoI 1.4.1.) and microgardens 	ST- MT	<ul style="list-style-type: none"> • Increased urban agricultural production 	<ul style="list-style-type: none"> • n. of households trained in rooftop gardening 	<ul style="list-style-type: none"> • MoA relevant reports 	<ul style="list-style-type: none"> • MoA- DAE • BARI and other NARS institutes • Agricultural Universities • Private sector
	<p>2. Develop vertical farming</p> <ul style="list-style-type: none"> • Carry out R&D so that a greater array of fruits and vegetables can be grown through vertical farming • Promote extension services for vertical farming 	ST- LT				
	<ul style="list-style-type: none"> • Facilitate funding to those wanting to invest in vertical farming • Research to bring down the costs of setting up and running vertical farming 					
	<p>3. Promote hydroponics and aquaponics</p> <ul style="list-style-type: none"> • Train stakeholders to use hydroponics in a safe and sustainable way • Providing knowledge resources, guidance and training 	ST- LT				
<p>4. Boost R&D for urban and peri-urban agriculture</p> <ul style="list-style-type: none"> • Promote cooperation between government agencies, non-state research institutes and the private sector with adequate incentives • Promote R&D to develop new techniques for urban/peri-urban agriculture 	ST- LT				<ul style="list-style-type: none"> • NGOs, INGOs • DPs 	

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 2: To ensure access to safe and nutritious food at an affordable price						
Strategy 2.1 Improve market access and stabilize food markets						
2.1.1. Promote the establishment, improvement and management of post-harvest marketing infrastructure and processing facilities for horticultural products, pulses and legumes, livestock and fisheries	1. Support the expansion and maintenance of transportation infrastructure at both national and local level <ul style="list-style-type: none"> • Boost connectivity between different transport modalities • Strengthen arterial transport corridors, and bypass and connecting roads • Place greater emphasis on inland water transport and railways (as per PP2041) • Carry out major programme of railway upgrading and intermodal transport connectivity 	LT	<ul style="list-style-type: none"> • There is seamless flow in goods traffic and transport facilities (as per PP2041) • There are enough facilities to meet the demand for cold storage and other facilities required to transport perishables 	<ul style="list-style-type: none"> • % of upazila and union road network in good condition (as per CIP2 MR) • n. of growth centres, rural markets, women market centres, and Union Parishad Complexes developed by LGED and DAM (as per CIP2 MR) 	<ul style="list-style-type: none"> • LGED regular publications • DAE, BBS Statistical Yearbook • LGED, DAM 	<ul style="list-style-type: none"> • MoLGRD&C-LGED • MoA- DAE, DAM, Farmers' Information and Advice Centers (FIACs) • MoFL • MoP- BBS • MoFood- FPMU • Local authorities • BAU • DPs • NGOs, INGOs • Private sector
	2. Facilitate the establishment, improvement, management and maintenance of cold storage and transportation facilities for perishable nutrient rich foods <ul style="list-style-type: none"> • Stimulate cold storage development in a coordinated way through PPPs especially through supermarket retailers • Ensure innovation and compliance to food safety standards • Use PPPs for the establishment and maintenance of regional market hubs, cold storages, warehouses, modern growth centres, union parishad complexes and cold chain transportation facilities (including through railway cool chains) 	MT				
	3. Invest in the establishment of on-farm processing infrastructure, including on-farm, and storage facilities (see Aof 5.2.1 and 5.2.2)	MT- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
2.1.2. Set up financial intermediation services with improved access to credit for rural markets along with other complementary services	<p>1. Adapt financial services to the needs of post-harvest food value chains</p> <ul style="list-style-type: none"> • Convert the SME Foundation into SBA, a one-stop platform to promote access to institutional credit • Develop novel payment systems such as a digitized payment • Consider all commercial loans regardless of their value to include even the smallest entrepreneurs • Expand innovative tools like warehouse receipt financing for post-harvest financing • Move beyond current property-based collateral system • Expand the legal and regulatory structure of the mobile-payments system • Improve the insolvency and debt resolution solution for MSMEs e.g. provide dedicated lines of credit to marketing-processing cooperatives and associations (AoI 2.2.1). • Improve the credit market through a range of measures including: credit bureaus, credit guarantee schemes, and a range FinTech initiatives in order to improve credit market information, reduce compliance and information costs and lower credit risk with particular focus on the poor (as per the PP2041) 	<p>ST</p> <p>ST- MT</p> <p>MT- LT</p>	<ul style="list-style-type: none"> • Access to credit for post harvest activities ensured for all types of FVC actors including women and MSEs • Increased insurance services for MSMEs and other risk financing 	<ul style="list-style-type: none"> • Credit disbursement to FVC MSMEs • Existence of an operational SBA 	<ul style="list-style-type: none"> • Bangladesh Bank reports 	<ul style="list-style-type: none"> • MoA-DAE, DAM, BADC • MoFL • MoP- BBS, BFSA • PKSF • Bangladesh Bank • MFIs and Non-Bank • Financial Institutions
	<p>2. Expand financial services to develop post-harvest activities, with a particular focus on rural areas and women</p> <ul style="list-style-type: none"> • Expand access to financing -both bank and non-bank- to those traditionally excluded especially in rural areas, and women in particular in the spirit of “leaving no one behind” • Establish growth centres in each upazilas in order to, e.g., facilitate credit (in line with NAP PoA 2020 1.6.1) • Target E-commerce platforms, digital marketplaces and individual sellers beyond Dhaka and other urban areas • Extend finance to MSMEs for improving their practices (e.g., by adopting GAP, GMP, GHP, HACCP, ISO certification, etc.) and acquiring post-harvest technologies • Explore innovative approaches • Encourage MSMEs to link up with each other (AoI 2.2.1) and create groups and associations (AoI 2.2.4) to facilitate their financial inclusion. 	<p>ST- MT</p> <p>LT</p>				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>3. Develop insurance services for MSMEs and other risk financing</p> <ul style="list-style-type: none"> Expand investment in insurance services with clientele friendly premium services for the MSMEs in the agro-FVC Invigorate and extend coverage of existing MFIs' microinsurance Launch other types of risk financing mechanisms such as credit guarantee schemes and crowdfunding platform to create opportunities for equity financing for microenterprises Develop other risk financing mechanisms 	ST ST- MT				
2.1.3. Maintain an orderly market management by securing property rights, regulating competition and stabilizing prices	<p>1. Carry out an Ecosystem Competition Analysis (in line with the PP2041)</p> <ul style="list-style-type: none"> Measure the competition intensity and product differentiation Assess the need and opportunity to grant property right protection Analyse sectoral entry barriers by their category: legal (patents/licenses), technical (high start-up, transaction costs, investment costs; monopoly; technical knowledge); strategic (predatory pricing/ first mover/incumbent positioning); brand loyalty 	LT	<ul style="list-style-type: none"> Sector specific guidelines in place Operational Bangladesh Competition Commission and NIIPRP for the food industry 	<ul style="list-style-type: none"> Competition intensity index Product differentiation index 	<ul style="list-style-type: none"> Yearly monitoring 	<ul style="list-style-type: none"> MoC- Bangladesh Competition Commission MoInd- NCIP Mo PA Private sector
	<p>2. Fully operationalise Bangladesh Competition Commission (in line with the PP2041)</p> <ul style="list-style-type: none"> Establish sector-specific guidelines to ensure competition and adequate regulatory mechanisms are implemented Equip Competition Commission with adequate human and 	LT				
	<p>3. Operationalise the NIIPRP in particular for the food industry (in line with the PP2041 and the NIIPRP, 2018)</p> <ul style="list-style-type: none"> Develop a Roadmap to ensure policy implementation, monitoring and adequate financing Promote collaboration between NCIP and MoC, Agriculture and Bangladesh Competition Commission to ensure innovation and technological adoption within the food industry Make NCIP responsible for facilitating Policy coherence between the NIIPRP and the relevant national and sectoral development policies 	ST ST- MT LT				
2.1.4. Ensure trade liberalisation	<p>1. Sustain transparency in trade facilitation</p> <ul style="list-style-type: none"> Improve timely availability of import-export related information available in the Bangladesh trade portal 	MT- LT	<ul style="list-style-type: none"> More transparency in trade facilitation 	<ul style="list-style-type: none"> Total regional (Asia) food trade 	<ul style="list-style-type: none"> MoF yearly budget documents 	<ul style="list-style-type: none"> MoC- FTA Wing MoF

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
and facilitation to support the supply of quality food at all times	<ul style="list-style-type: none"> • Expedite consultations among stakeholders on new draft regulations • Inform traders on new regulations before these become effective • Ensure advanced ruling on trade classification 		<ul style="list-style-type: none"> • Stable food trade partnerships in place • Operational SFB 	<ul style="list-style-type: none"> • Share of regional (Asia) food trade in total trade • Value of food and beverage exports (CIP2 indicator) 	<ul style="list-style-type: none"> • MoC/ BBS/ MoA statistics 	<ul style="list-style-type: none"> • MoFood- FPMU • MoA- DAM • DPs • SAARC • Private sector
	<p>2. Strengthen institutional arrangement and cooperation at national level</p> <ul style="list-style-type: none"> • Ensure necessary support to FTA wing and BTTC from the national agencies involved at various levels with food trade • Form/strengthen a unit to facilitate and monitor FTA for cereals, cash crops and agricultural inputs 					
	<p>3. Enable paperless trade</p>					
	<p>4. Support budget and capacity development of relevant institutions</p>					
	<p>5. Stabilise food trade partnership with key food exporting countries through foreign trade agreements especially within SAARC region</p> <ul style="list-style-type: none"> • MoC and DAM to continue monitoring food price and trade volumes (see Strategy 5.3) • Sign long-term agreements with key food trade partners, leveraging on regional associations (e.g. SAARC) 	LT				
	<p>6. Operationalise the SAARC Food Bank (SFB)</p> <ul style="list-style-type: none"> • Renew political commitment and support policy amendments • Revise pricing strategy, institutional and distribution mechanisms • Ensure additional provision to SBF to enhance regional trade 	LT				
	<p>7. Optimise export support policy</p> <ul style="list-style-type: none"> • Monitor ongoing supportive measures to the export sectors and adjust based on sub-sectors' needs • Review competitiveness and performance of export-oriented food sectors and ensure adequacy of the policy instruments in place • Monitor import substitution practices as appropriate 	LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 2: To ensure access to safe and nutritious food at an affordable price						
Strategy 2.2 Improve value chain and marketing systems						
2.2.1. Stimulate innovation-led efficiency gains in food value chains by shortening the chain, improving cooperation among agents, and by reducing food losses and waste	1. Promote innovation for digital invoice and value chain inventory management <ul style="list-style-type: none"> Promote innovative technological platform hosting digital invoice, order maintenance Promote government prescribed Electronic Cash Register and Point of Sale - for VAT automation process 	ST-LT	• More efficient FVCs	<ul style="list-style-type: none"> n. of registered value chain actors n. and types of contract farming Cold storage capacity (see 5.2.2.) 	<ul style="list-style-type: none"> Reports of responsible ministries and other agencies DAM reports DAE reports BFSA reports 	<ul style="list-style-type: none"> MoA- DAM, DAE, BADC MoP, BBS MoFood, BFSA PKSF MFI and Non-Bank Financial Institutions Private sector DPs NGOs, INGOs
	2. Promote innovative solutions to shorten FVCs <ul style="list-style-type: none"> Increase contract farming and to reduce number of FVCs actors Increase the registration of value chain actors for traceability Prioritize the set-up of formal distribution channels through the increased enforcement of food safety standards along with the consumer awareness and sensitization campaigns 	ST-LT				
	3. Strengthen the linkages among FVC agents and marketing groups (cross reference Aoi 2.2.4) <ul style="list-style-type: none"> Increase partnership among the marketing group, agents, contract farming Increase innovative solution with online platform for connecting the producers and the consumers 	ST-LT				
	4. Promote innovative solution for reducing food loss and waste (see Strategy 5.2)	ST-LT				
	5. Promote innovative solution for packaging and storage (Aoi 2.3.1) <ul style="list-style-type: none"> Promote smart packaging (e.g. plastic crates, paper bagging) for each fruits and vegetables Increase research for packaging innovation from reduced contamination as well as environmental sustainability. Enforce the food packaging and labelling guideline of BFSA 					
2.2.2. Encourage and support the establishment and growth of financially viable MSMEs	1. Regularly perform Enterprise Surveys (ESs) <ul style="list-style-type: none"> Expand the World Bank Enterprise Survey under the leadership of BBS and the MoInd to include a topic on environment and sustainability and use the CGAP 	ST- MT	• Growth in number of MSMEs in the FVC	• n. of MSMEs involved in the FVC	• Enterprise survey BBS reports	<ul style="list-style-type: none"> MoP- BBS MoInd MoEFCC

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	enterprises' subgrouping and profiling by sub-sectors and by sub-region			<ul style="list-style-type: none"> Percentage of credit provided to food MSMEs as percentage of total MSME credit 	<ul style="list-style-type: none"> Bangladesh Bank Credit Information Bureau Annual reports of MoInd, BB, World Bank, FAO 	<ul style="list-style-type: none"> MoA BB, Credit Information Bureau World Bank and other DPs Private sector
	<p>2. Design tailored-made financial, technical and managerial support based on the enterprise profiling and surveys</p> <ul style="list-style-type: none"> ESs will help provide targeted support to different groups including peer to peer exchange among different profiles of MSMEs Leverage on the promotion of inclusive cooperative/ group-based processing and marketing (AoI 2.2.4) Tap into continued technical support from DPs and the GCF 	MT- LT				
	<p>3. Promote private sector investment in agro-food processing through large scale adoption of energy saving technology and equipment</p> <ul style="list-style-type: none"> Expand GFC Country Programme to include agro-processing in line with PP 2041 Design an integral package of concessional financing for agro-processing and technical assistance to create an enabling environment (AoI 2.2.3) with adequate technical assistance Submit proposal to the the GCF for funding to be implemented under the coordination of MoInd and MOEFCC and support from MoA Essential elements of the programme design will be capacity building, awareness raising, policy development and support in loan disbursement, as well as monitoring and evaluation of the programme target 	ST MT- LT				
<p>2.2.3. Create an enabling environment to attract private investment in infrastructure, processing, value addition, marketing and eliminate business barriers</p>	<p>1. Establish a favourable policy and technical support to incentivise investment in food processing</p> <ul style="list-style-type: none"> Conduct regular enterprise surveys to ensure that policy makers' agenda adapts to MSMEs' evolving constraints Tap into GCF to ensure that an integral package of concessional financing is provided to agro-processing (AoI 2.2.2) Enable strong PPPs for coordinated investments, technical support and enabling policies 	ST- LT	<ul style="list-style-type: none"> Greater involvement and investment of the private sector in FVCs By 2030, ensure universal access to affordable, reliable and modern energy services (SDG target 7.1.); 	<ul style="list-style-type: none"> n. of food processing units National, urban and rural proportion of population with access to electricity (SDG 7.1.1) 	<ul style="list-style-type: none"> SDG Bangladesh Progress Report Tracking SDG 7 (World Bank) 	<ul style="list-style-type: none"> MoInd MoP -BBS MoPEMR-SREDA, BPDB DPs Private sector

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<ul style="list-style-type: none"> Strengthen and empower local governance (AoI 5.5.2) to ensure the balance between private investment and socio-economic development in rural areas Implement transparency and anti-corruption policies and actions 		<ul style="list-style-type: none"> 100 % Proportion of population with access to electricity 			
	<p>2. Provide synergetic public goods such as infrastructure, data and information</p> <ul style="list-style-type: none"> Leverage FAO HiH (AoI 5.3.1) to ensure synergetic interaction and matchmaking between actors Establish SEZ for agro-processing to facilitate economy of scope and scale (AoI 2.3.3). 	ST- LT				
	<p>3. Ensure power generation capacity</p> <ul style="list-style-type: none"> Bangladesh Power Development Board (BPDB) to address surge in power demand and adjust the energy mix for ensuring long-term energy security by strengthening the preparation of power system master plans Exploit synergies with the GCF (AoI 2.2.2) 	ST- LT	<ul style="list-style-type: none"> 35% of population with primary reliance on clean fuels and technology 			
2.2.4. Promote inclusive cooperative/group-based processing and marketing	<p>1. Enhance political commitment and local level institutional support in cooperative/ group-based food processing</p> <ul style="list-style-type: none"> Update National Cooperative Policy 2012 Local government to provide institutional local government (AoI 5.5.2), along with implementation of transparency and anti-corruption measures 	ST-LT	<ul style="list-style-type: none"> Increased numbers of cooperatives and groups in food processing and marketing 	<ul style="list-style-type: none"> n. of cooperatives and groups involved in food processing and marketing % of tax exemption for food processing co-operatives 	<ul style="list-style-type: none"> Reports of responsible ministries and other agencies Bangladesh Bank reports 	<ul style="list-style-type: none"> MoLGDRC-RDCD MoP- BBS MoFood MoF SME Foundation
	<p>2. Assess the comparative advantage of the cooperative system in Bangladesh</p> <ul style="list-style-type: none"> Assess and demonstrate comparative advantage of cooperatives compared to the private sector Integrate processing and marketing cooperatives into the Enterprises Surveys (AoI 2.2.2) 	ST-LT				
	<p>3. Integrate cooperative-related sensitisation activities in community development projects</p>	ST-LT				
	<p>4. Support financial inclusion of cooperatives/ groups-based processing, marketing and access digital services</p> <ul style="list-style-type: none"> Provide special attention, dedicated lines of credit, low-interest enterprise loans (AoI 1.1.9) and financial managerial support (AoI 2.1.2) to cooperatives 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<ul style="list-style-type: none"> Ensure their access to digital services through the implementation of the National ICT Policy 2018 			<ul style="list-style-type: none"> % of upazilas covered under VGD program providing 		
2.2.5. Strengthen ICT-based market information system to provide real time support to farmers	<p>1. Strengthen DAM market price data monitoring system through expanded organizational structure up to upazila level (as per Output 4.6. under Strategic Goal 4 SPARS)</p> <ul style="list-style-type: none"> Carry out detailed assessment of necessary human and financial resources of DAM including at upazila level Allocations planned accordingly 	ST	<ul style="list-style-type: none"> Widespread access to market information by farmers across the country through use of ICTs 	<ul style="list-style-type: none"> n. of upazila level DAM staff n. of beneficiaries reached 	<ul style="list-style-type: none"> DAM Annual reports 	<ul style="list-style-type: none"> MoA-DAM, DAE MoP-BBS agricultural wing MoPA MoFood-FPMU, DG Food Private sector DPs INGOs, NGOs
	<p>2. Improve data collection methodology with BBS support (as per Activity 4.6.2 SPARS)</p>	ST- MT				
	<p>3. Make price data monitoring system available, reliable and effective</p> <ul style="list-style-type: none"> Develop a tool in coordination with existing and effective initiatives in synergy with the private sector (e.g. Grameenphone GP Krishi Shoba, call centre information advice for farmers) and international development initiatives (e.g. MMI support to virtual call centres) in support of farmers' decision making and income opportunities 	ST- MT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 2: To ensure access to safe and nutritious food at an affordable price						
Strategy 2.3 Preserve and enhance nutrient content along the value chain						
2.3.1. Preserve and promote food safety and nutrients along the value chain including during transportation, processing, packaging, storage, wholesale and retail	1. Collect evidence on gaps and opportunities to preserve food safety and nutrients along the FVC and implement recommendations	ST- MT	• Evidence available on gaps and opportunities to preserve food safety and nutrients along the FVC and recommendations implemented	• n. of research projects under NARS on nutrient preservation • n. of domestic foods standardised/ certified by BSTI	• FPMU monitoring • BSTI reports	<ul style="list-style-type: none"> • MoFood-FPMU • MoInd-BSTI • MoHFW • MoA- DAE • MoP-BBS • MoIB • MoHFW- BFSA • BCSIR • INFS, Dhaka Universities • Accredited Food Laboratories • B-SAFE Foundation • BFSN • CAB • Private sector • DPs • NGOs, INGOs
	2. Sensitise stakeholders of the value chain to food safety and nutrition (in line with NPAN 6.2.5 and 6.5.8)	ST- MT				
	3. Establish and ensure efficient food storage facilities	ST- LT				
	4. Encourage safe food outlets selling certified food	ST- MT				
	5. Strengthen food product certification and nutrition labelling for assuring quality and safety	ST- MT				
	<ul style="list-style-type: none"> • Sensitise all stakeholders on the value chain (e.g., food producers, agribusinesses) to food safety and nutrition • Create incentives and flag those that exist (e.g. opening up of export markets when complying to safety standards) • Sensitise consumers to these issues (see AoI 3.2.2 and 5.1.3) 					
	<ul style="list-style-type: none"> • Establish and ensure efficient and sufficient food storage facilities, including cold storage (see AoI 2.1.1. and 5.2.1). • Audit commercial and public storage facilities to follow BFSA standards (including PFDS storage - see AoI 4.1.1). • Take actions against defaulters • Promote adequate storage at all stages of value chain: in farms, processors, wholesalers, and retailers, and even consumers (see AoI 3.2.1. and 5.1.3) 					
	<ul style="list-style-type: none"> • Create awareness • Provide incentives to retailers 					
	<ul style="list-style-type: none"> • Review and ensure compliance with food certification guidelines harmonized with Codex standards and BSTI certification. • Ensure technical teams periodically review certifications of products and establishments • Provide appropriate nutrient labelling and product information in line with legal requirements and dietary recommendations • Provide food producers/ manufacturers a platform where they can consult for concerns and issues on certification & labelling 					

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
2.3.2. Promote the fortification and nutrition enhancement of relevant foods where desirable and efficient	<p>1. Collect data to inform policy</p> <ul style="list-style-type: none"> Review all fortification endeavours Carry out a National Micronutrient Study and a specific National Iodine Deficiency Disorders Survey disaggregating by regions and socio-economic groups Regularly assess the distribution of key micronutrient deficiencies across regions and population groups 	ST ST- LT	<ul style="list-style-type: none"> 90% of households consuming Vitamin A-fortified edible oil by 2025 (as per NSPCMD) 50% of upazilas covered under VGD program to provide nutritionally enriched fortified food by 2025 (as per NPAN2) 	<ul style="list-style-type: none"> Domestic production of VitA fortified edible oil as proportion of total edible oil production n. of nutritionally fortified foods in the market 	<ul style="list-style-type: none"> National Micronutrient Survey NPAN2 monitoring 	<ul style="list-style-type: none"> MoHFW- IPHN, BNNC MoFood- IPHN, MoWCA Mold - BSTI, BSCIC MoC MoA MoST, IFST Control of Iodine Deficiency
	<p>2. Monitor existing endeavours and apply existing rules</p> <ul style="list-style-type: none"> Check quality of fortified foods Adjust and expand current initiatives to adapt to the needs (as identified above) Reinforce compliance of the private sector to existing laws and notably on vitamin A fortification (see Strategic Area 6 of the NSPCMD). Strengthen the capacity of relevant institutes (as advocated by NSPCMD) Introduce quality control laboratories to check fortification standards, quality and levels and in particular in all salt industries to check the suitability of salt iodisation 	ST MT - LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>3. Devise and deploy new programmes to respond to the needs identified (Strategic Area 2 of the NSPCMD)</p> <ul style="list-style-type: none"> • Use experience from other countries • Consider expanding the range of fortified foods • Develop techniques to improve the bioavailability of nutrients such as the germination and malting of grains and pulse for example, and ways to enrich foods. • Research the possibility of addition or inclusion of foods to existing ones (e.g., in complementary foods) to enhance nutritional value of foods using local products 	MT- LT	<ul style="list-style-type: none"> • 90% of vulnerable people to receive nutritionally enriched fortified food during and immediately after emergency by 2025 (as per NPAN2) 	<ul style="list-style-type: none"> • nutritionally enriched fortified food • % of vulnerable people receiving nutritionally enriched fortified food during and immediately after emergency 		<ul style="list-style-type: none"> Disorders (CIDD) Project • NGOs, INGOs • Private sector • DPs
	<p>4. Promote the sale and use of fortified foods and advocate for their use</p> <ul style="list-style-type: none"> • Encourage retail sector to sell fortified products at affordable prices • Promote their consumption by all segments of the population through marketing campaigns (as promoted by Strategic Area 5 of the NSPCMD and in line with Strategic Objective 4 of the National PoA for Adolescent Health Strategy 2017-2030). • Integrate fortified foods with other health programmes to create greater demand 	ST- LT				
	<p>5. Prevent loss of nutrients while processing foods</p> <ul style="list-style-type: none"> • Identify where loss of nutrients happens in the value chain (see AoI 2.2.1 and 5.2.2). • Take measures to prevent loss of nutrients in the processing of foods e.g., milling of grains, parboiling of rice flakes 	ST- LT				
	<p>6. Adjust, expand and scale up existing programmes</p> <ul style="list-style-type: none"> • Expand outreach, coverage and access to fortified foods (e.g., iodised salt, Vit A oil fortification) by targeted populations 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>based on monitoring (see above) - in line with NPAN2 Strategic Action 6.2.8 and Strategic Objective 4 of the National PoA for Adolescent Health Strategy 2017-2030)</p> <ul style="list-style-type: none"> • Explore the scope for double fortification of edible oil with vitamin A and vitamin D Ensure to reach groups with specific needs and/or deficiencies in particular nutrients • Introduce more fortified foods into food basket of safety net programs (in line with NPAN2 Key Action Area 6.2.7) and bring to scale (see AoI 4.3.3) 					
2.3.3. Promote innovation and development of appropriate technologies to preserve nutritional value in local and export processing zones (EPZs), including under Public Private Partnership (PPP)	<p>1. Strengthen linkages with local economies</p> <ul style="list-style-type: none"> • Consider environmental and socio-economic factors and local consensus in appraisal of business plans submitted by proponents 	ST- LT	<ul style="list-style-type: none"> • Agricultural produce EZs developed throughout the country 	<ul style="list-style-type: none"> • Territorial competitiveness indices (agricultural specialization, infrastructure, human capital) • n. of agricultural produce EZs 	<ul style="list-style-type: none"> • BEZA reports • MoInd reports 	<ul style="list-style-type: none"> • PMO, BEZA, PPPA • FPMU • MoInd • MoA-BIRTAN, BARC • MoC • Local government authorities • INFS, Dhaka University • BAU • FAO, ADB, JICA and other DPs • NGOs and INGOs
	<p>2. Identify areas, roles and gaps to develop agricultural produce EZs</p> <ul style="list-style-type: none"> • Identify areas for agro-processing of nutritious crops/horticulture with a potential high socio-economic and employment impact • Analyse territorial competitiveness of selected areas • Assess gaps and investment needs • Match investment needs with respective areas 	MT- LT				
	<p>3. Promote learning from international experience, best practice and standards</p> <ul style="list-style-type: none"> • Review the best practice experience and standards • Organize symposium for institutions such as BEZA to exchange experience • Incorporate improvements into the practice 	ST- LT				
2.3.4. Build the capacity of the private sector to test food and communicate results to and engage with value chain actors for adequate remedial actions, and establish food traceability mechanisms	<p>1. Accelerate GAP, GAqP, GHP, GMP training and knowledge transfer (see AoI 5.1.2., Action 6)</p>	ST- LT	<ul style="list-style-type: none"> • Increased food testing by private sector and communication of results to consumers 	<ul style="list-style-type: none"> • n. of private and public food testing laboratories listed under BFSA at national and subnational level • n. of food testing accredited labs 	<ul style="list-style-type: none"> • BFSA reports • MoC reports 	<ul style="list-style-type: none"> • MoInd- BSTI • MoFood- FPMU • MoST- BCSIR, IFST • MoLGRD&C • MoA-DAE, BARC • Private sector
	<p>2. Prepare strategy, guidelines, and Standard Operating Procedures for the private sector (see AoI 5.1.2., Action 2)</p>	ST- MT				
	<p>3. Build capacities of private sector to test, trace, recall foods and communicate with the public</p> <ul style="list-style-type: none"> • Strengthen capacities of all private sector actors along the value chain-so that they understand the importance of and are able to 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	engage in activities relating to testing food safety and recall management			<ul style="list-style-type: none"> Trade licenses issued to SMEs on the food supply chain 		<ul style="list-style-type: none"> DPs NGOS, INGOs SME Foundation PKSF BFSN, BAB
	<ul style="list-style-type: none"> Establish traceability mechanisms (as detailed in AoI 5.1.2) Train private sector to communicate with the public to advertise adherence to food safety standards but also in cases of breakdowns in food safety 					
	<p>4. Promote the establishment of food testing laboratories</p> <ul style="list-style-type: none"> Promote establishment of private laboratories Decide on location taking into account location of agro-processing hotspots, risk assessments and a cost benefit analysis Use PPP modalities to meet the needs of the country and set up a network of laboratories 	ST-LT				
	<p>5. Promote private sector based accredited independent certification and inspection agencies for both large and MSMEs and issue trade licenses</p>	ST-LT				
	<p>6. Strengthen consumer forums and build consumer awareness (see AoI 5.1.3)</p>	ST-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 2: To ensure access to safe and nutritious food at an affordable price						
Strategy 2.4 Raise incomes of the poor and food insecure						
2.4.1. Expand and promote agriculture-driven, off-farm employment and other employment along the food value chain by expanding vocational training opportunities for rural youth, women and disabled people	1. Increase market demand-based vocational training on the FVC for rural youth, women, and disabled persons <ul style="list-style-type: none"> • Increase market demand based TVET training on FVC • Introduce location specific TVET training for the rural youth, women, and disabled groups 	ST- MT	<ul style="list-style-type: none"> • Increased employment in agriculture-driven, off-farm employment and other employment along the FVC, especially for rural youth, women, and disabled persons 	<ul style="list-style-type: none"> • Coverage of TVET training in FVC especially to rural youths, women, and disable person • n. of Agri Service Centres 	<ul style="list-style-type: none"> • Reports of agencies involved in FVC TVET • MoA reports 	<ul style="list-style-type: none"> • MoInd • MoA- DAE, BARC • MoFL • MoE- DTE, BTEB • MoYS- DYD • MoE • MoLE-Bureau of Manpower Employment and Training • MOLGRD&C • SME Foundation • PKSF • Private sector • NGOs, INGOs • DPs
	2. Capacity building training for women enterprises Support women entrepreneurs with credit facilities, extension services, ICT services, and the market integration in addition to the capacity development training <ul style="list-style-type: none"> • Train women entrepreneurs for women market corner at each village and in the growth centres • Organize training from both public and private organizations for better market access • Promote ICT based training using smart phone with low cost high-speed internet connection with mobile financial services for the women entrepreneurs 	ST- MT				
	3. Promote training on Agri Service Centres for repair and servicing of agriculture machineries <ul style="list-style-type: none"> • Increase number of TVET training on agriculture machineries repair and servicing • Establish repairing and services centres in the rural areas 	ST- LT				
	4. Capacity development training for promoting Custom Hiring Centres for agriculture implements	MT-LT				
	5. Strengthen co-ordination among the government agencies	MT- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
2.4.2. Provide adequate credit, technology, information and other related services for the growth of agro-based industries and the broader rural non-farm economy, with special emphasis for the most vulnerable sections of the population	<p>1. Increase access of formal sector finance for most vulnerable</p> <ul style="list-style-type: none"> • Increase access of formal sector finance at low rate of interest to individual and group based agro-based and non-farm CMS activities (see AoI 1.1.4 and 2.1.2) • Promote CMS enterprises that use by-products • Facilitate market linkages (in line with the National Agriculture Policy (2018)) • Make separate allocations to target PwD 	ST- LT	<ul style="list-style-type: none"> • Increased access to formal sector credit and microcredit for most vulnerable sections of the population • Increased employment among underprivileged groups, women and PwD 	<ul style="list-style-type: none"> • n. of small borrowers • n. of skill training courses available in agro and non-farm enterprise activities • % of population with access to smart phones and ICT in rural areas 	<ul style="list-style-type: none"> • Report of Bangladesh Bank • Report of National Skill Development Authority • National ICT Household Survey 	<ul style="list-style-type: none"> • Bangladesh Bank - Microcredit Regulatory Authority • PMO- National Skill Development Authority • MoICT-ICT Division • MoE- BTEB • MoF • MoLGRD&C-RDCD • MoInd-SME Foundation BSCIC • NGOs, INGOs • DPs • Private sector
	<p>2. Improve productivity of the use of credit</p> <ul style="list-style-type: none"> • Carry out need-based training for acquiring skills in enterprise activities • Transfer technology to borrowers from vulnerable groups • Roll out community-based training targeting key rural industries • Provide skills relevant to rural infrastructure 	ST- LT				
	<p>Develop range of community services and specially designed courses for increased employment opportunities for underprivileged groups (in line with National Skill Development Policy 2020)</p> <ul style="list-style-type: none"> • Develop and modernize existing TVET Institutes 					
	<p>3. Extend support to organisations that promote women entrepreneurs</p> <ul style="list-style-type: none"> • Support organisations that promote women entrepreneurs in informal and formal economy • Give access to finance schemes • Address gender imbalance in skill training 	ST- LT				
	<p>4. Expand access to ICT, and cell phone connectivity in rural areas and reduce digital divide</p>	ST-MT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 3: To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements						
Strategy 3.1 Develop a long-term national plan for ensuring safe, nutritious and sustainable diets in alignment with recommended nutrient intakes at every stage of the life cycle.						
3.1.1. Develop a national-level food production, supply and consumption plan based on a nutrient gap analysis considering energy and nutrient demand for a healthy and active life	<p>1. Establish and achieve nutrient targets (in line with Pillar III of the CIP2)</p> <ul style="list-style-type: none"> Adapt methodology for determining recommended dietary intake, energy and nutrient requirements for different age, and physiological and physical activity categories Establish long-term targets for physical growth using dynamic tools to ascertain per capita consumption of cereals and other foods for diversified food planning 	MT	<ul style="list-style-type: none"> Share of total dietary energy from consumption of cereals <60% (as per NPAN2) 	<ul style="list-style-type: none"> Share of total DES from cereals 	<ul style="list-style-type: none"> BDHS FAOSTAT 	<ul style="list-style-type: none"> MoHFW, BNNC, NIPORT, IPHN MoFood- FPMU MoF- DLS, DoF MoA- BIRTAN Dhaka University- INFS BIRDEM, WHO, FAO and other DPs NGOs, INGOs
	<p>2. Carry out nutrient gap analysis</p> <ul style="list-style-type: none"> Calculate nutrient gaps from HIES and related national food consumption data sets Conduct national food consumption surveys to assess current nutrient intake and measure the nutrient gap at individual level Calculate consumption trends and draw up linear projections for knowing the rate of dietary diversification of specific foods/food groups Use secondary data analysis to identify the enabling factors and barriers to nutrient intake and gap, in particular the availability, cost and affordability of nutritious diets Carry out in-depth analyses to drivers for healthy food consumption 	LT				
	<p>3. Periodically update of national dietary guidelines and implement them (as per NPAN2 Key Action Area 6.2.9)</p> <ul style="list-style-type: none"> Outline science-based guidance on food-based recommendations for desirable dietary intake. Update dietary guidelines based on latent nutrient gap analysis and nutrient targets for long-term food planning Use the consolidated set of general, age and disease-specific guidelines as a policy tool in agriculture, food, and nutrition planning and programmes 	LT				
	<p>4. Update FCTs and propose food list for healthy diets</p> <ul style="list-style-type: none"> Collaborate with academia and FAO to periodically update Bangladesh FCTs to expand the range of foods Include more foods with wider nutrient composition information, non-nutrient compounds of nutritional significance and other nutritionally important constituents 	LT				

	<p>notably, dietary fibre, anti-nutrients, phytonutrients, n-3 and n-6 fatty acids.</p> <ul style="list-style-type: none"> Document and develop lists of local, low-cost nutritious foods, considering the food patterns of ethnic groups, areas like char, haor and hilly regions as well as traditional, underutilized foods (see AoI 1.2.5) 					
3.1.2. Support the implementation of desirable dietary pattern (DDP) plans for a healthy and sustainable food system	<p>1. Focus on smallholder farmers as important change agents for improved food systems and nutrition</p> <ul style="list-style-type: none"> Establish upazila growth centres to provide services/facilities from a single window (in line with NAP PoA 2020 Program 1.6- see AoI 1.6.1) Facilitate access to bank financing at affordable rate of interest (see AoI 1.1.4 and 2.1.2) Promote food processing, packaging, labelling, preservation and effective storage through appropriate equipment, technologies and trainings (in line with NPAN2 6.2.5 and see AoI 1.1.2, 2.3.1 and 3.2.1) 	ST-LT	<ul style="list-style-type: none"> Uptake of DDP across sectors to ensure a healthy and sustainable diet by 2030 	<ul style="list-style-type: none"> n. of upazilas in which a "Growth Center" has been established (as per NAP PoA 2020 indicator for 1.6.1) Per capita availability of a variety of foods (rice, fruits, vegetables, pulses, milk, fish, meat, poultry, egg) according to DDP targets 	<ul style="list-style-type: none"> HIES surveys Reports of relevant ministries MoFL APA DAE APA National dietary 2020 	<ul style="list-style-type: none"> MoA-DAM, DAE, BIRTAN MoFood-FPMU BFSA MoFL MoHFW MoPME MoEFCC MoP- BBS BARI and other NARS Institutes Scheduled Banks FAO and other DPs NGOs, INGOs
	<p>2. Promote the productive role of women in the food system value chain and provide required support</p> <ul style="list-style-type: none"> Engage women in nutrition-sensitive agriculture, horticulture, and livestock interventions Provide technical support to women through training on diversified food production, post-harvest, and agro-processing activities Encourage women's entrepreneurship through Self Help Groups (in line with NAP PoA 2020 AoI 2.4.4) Mainstream Nutrition Training/ BCC with extension services targeting women 	ST-MT				
	<p>3. Incorporate integrated nutrition guidance tools to inform food system for healthy and sustainable diets</p> <ul style="list-style-type: none"> Develop integrated nutrition guidance tools for uptake by sectoral policies and action plans (see AoI 3.1.1) Ensure affordable and desirable foods for the vulnerable (see AoI 4.3.2) 	ST-MT				
	<p>4. Enhance private sector engagement for market-based approach for safe and healthy diets at affordable cost</p>	MT				
3.1.3. Expand human resources and strengthen institutional	<p>1. Recruit staff to work on nutrition-related matters (in line with NPAN2 Key Area of Intervention 6.3.15, 6.3.20)</p> <ul style="list-style-type: none"> Fill vacant posts for health /nutrition service delivery personnel 	ST- MT	<ul style="list-style-type: none"> <10% of vacant post for health/nutrition service delivery personnel will be 	<ul style="list-style-type: none"> n. of district nutritionists recruited 	<ul style="list-style-type: none"> Report from Human Resource 	<ul style="list-style-type: none"> MoHFW -BNNC, DGHS, DGFP, IPHN, NNS

arrangements to improve performance of nutrition services with special emphasis on field level	<ul style="list-style-type: none"> • Ensure sanctioned posts for required nutritionists in facilities/ hospitals 		<ul style="list-style-type: none"> filled up (in line with NPAN2 6.3.15) 	<ul style="list-style-type: none"> • % of district and upazila nutrition coordination committees in place 	Information System <ul style="list-style-type: none"> • Gazette BNNC Office Record, Meeting minutes 	<ul style="list-style-type: none"> • MoF • MoPA • MoLGRD&C • MoFood • MoPME • MoWCA • MoA • MoE • MoFL • MoDMR • MoSW • MoInd • MoEFCC • MoIB • MoPA • MoST • MoLE • MoC • MoWR • MoYS-DYD • UN • DPs • NGOs, INGOs
	<p>2. Strengthen institutional capacity of BNNC (in line with NPAN2 Key Area of Intervention 6.5.10, CIP2 Programme V.4.2)</p> <ul style="list-style-type: none"> • Activate bodies (council, executive committee and standing technical committee) with required support from BNNC with clear TORs and responsibilities • Identify nutrition focal points across sectors/ divisions/ departments/ services with clear TORs and accountability • Establish national and sub-national level coordination architecture (district and upazila) for planning, information sharing at local level 	MT-LT	<ul style="list-style-type: none"> • District and upazila nutrition coordination committee formed in all districts and upazilas (as per NPAN2 6.5.10) 			
	<p>3. Enhance human resources capacity and nutrition expertise with multi sectoral training and experience (in line with NPAN2 Key Action Area 6.3.14)</p> <ul style="list-style-type: none"> • Organise nutrition sensitization training for all the staff related to nutrition activities across sectors (including DNCC and UNCC members, extension workers, etc. 	ST-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
Objective 3. To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements						
Strategy 3.2. Enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe and nutritious diets						
3.2.1 Develop and promote local food systems, healthy cooking and food combinations, safe storage including knowledge on nutrient labelling	<p>1. Promote production and consumption of neglected and underutilized species NUS (in line with NPAN2 Key Action Area 6.2.1, CIP2 Programme III.1)</p> <ul style="list-style-type: none"> Promote a key food list based on FCT that prioritizes locally produced seasonal foods (AoI 3.1.1.) Explore and promote NUS foods rich in micronutrients throughout the country, with a focus on coastal and CHT regions and considering factors of seasonality and climate Include the nutritional value of the selected NUS in the FBDGs and FCTs Use FBDG and FCT as tools to promote NUS foods for biodiversity and food diversity 	ST- MT MT LT	<ul style="list-style-type: none"> At least 10 comprehensive coordinated multisectoral, multichannel advocacy and communication campaigns by 2025 (as per NPAN2 Key Action Area 6.3.12) 	<ul style="list-style-type: none"> n. of mass media activities on nutritional behaviour n. of institutions promoting dietary guidelines (as per CIP2) 	<ul style="list-style-type: none"> MoHFW Annual report/Health bulletin FPMU report 	<ul style="list-style-type: none"> MoHFW- IPHN, NNS, BNNC MoFood- FPMU MoA-DAE, BIRTAN, BARC, BARI MoIB MoE MoPME MoWCA MoFL- DoF, DLS MoInd INFS, Dhaka University BBF BIRDEM Bangladesh Knowledge Management Initiative UN – FAO, WHO, UNICEF, WFP and other DPs NGOs, INGOs
	<p>2. Develop nutrient-dense recipes (in line with CIP2 Programme III.1.)</p> <ul style="list-style-type: none"> Continue to develop nutrient-dense recipes adapting to local practices Promote nutrient dense recipes through nutrition training and demonstrations at community and household levels Include demonstration of recipes on food-based nutrition integrated into horticulture, livestock, fisheries and school nutrition programmes and NNS Disseminate recipe cards along with nutrition promotion in the community using mass media, online sources and national nutrition events 	ST- MT				
	<p>3. Promote appropriate cooking techniques and safe food preparation (in line with NPAN2 Key Action Area 6.3.3)</p> <ul style="list-style-type: none"> Develop food-based nutrition training, BCC and mass media activities to encourage appropriate cooking techniques (AoI 2.3.1), safe food preparation, handling, storage, sanitary food service, hygiene practices and safe food consumption. Promote nutritionally beneficial traditional methods (e.g., grinding, roasting, soaking, preservation technologies such as fermentation, pickling and sun drying) to enhance shelf life and conservation of nutrients 	ST-MT				

	<ul style="list-style-type: none"> Integrate modules on such topics in the DAE and upazila level agriculture extension services 	MT- LT				
	<p>4. Develop and promote tools for NBCC, food-based nutrition training and mass-media campaign (in line with NPAN2 Key Action Area 6.3.12)</p> <ul style="list-style-type: none"> Develop and update digitalized knowledge-based tools for online and social media (i.e. mobile phone-based messages or counselling, videos, messages, NCB e-learning platforms) for nutrition and hygiene behaviour themes Integrate NBCC with nutrition-sensitive interventions 	MT- LT				
	<p>5. Promote food based dietary guidelines with special focus on healthy diet and diversified food consumption (in line with NPAN2 6.1.2.5, 6.1.3.3, 6.2.9, 6.3.13)</p> <ul style="list-style-type: none"> Orientation of the health care providers and extension workers on FBDGs Scale up SBCC activities on healthy diets Disseminate the Healthy Food Plate and Healthy Mug to enhance knowledge and practices on healthy diet and dietary diversity across the country Promote nutrition labelling to encourage wise food purchase, stimulate healthy food demand and discourage consumption of junk foods (see AoI 2.3.1) Develop and implement a comprehensive coordinated multi-sectoral, multi-channel, advocacy, and communication strategy on nutrition 	ST- MT				
	<p>6. Promote nutritious and safe diets for food service institutions across formal and non-formal establishments</p>	MT- LT				
<p>3.2.2. Scale-up integrated nutrition education strategies to enhance consumption of healthy, diets, increase awareness of the nutrient composition of local foods as well as to prevent and control malnutrition (undernutrition and overnutrition)</p>	<p>1. Integrate nutrition components with homestead food production (in line with NPAN2 Key Action Area 6.2.1 and AoI 3.2.1)</p> <ul style="list-style-type: none"> Conduct nutrition trainings that promote diversified homestead gardening and backyard poultry/ small livestock production/aquaculture Mainstreaming nutrition trainings across DLS and DoF to promote small fish rearing and indigenous species 	LT	<ul style="list-style-type: none"> Per capita consumption of fruits and vegetables $\geq 400g$ per day (As per NPAN2) Total thinness among adolescent girls (15-19 years) $< 15\%$ (as per NPAN2) 	<ul style="list-style-type: none"> % increase in per capita consumption of fruits and vegetables % of thinness among adolescent girls (15-19 years) 	<ul style="list-style-type: none"> HIES, adhoc surveys and FPMU reports FAOSTAT BDHS 	<ul style="list-style-type: none"> MoA-DAE, BIRTAN MoPME MoFood- FPMU MoHFW- IPHN, NNS, BNNC MoLGRD&C Local Administration MoE
	<p>2. Promote "adolescent nutrition and healthy lifestyle" through formal and informal academic curriculum/training and SBCC programs (in line with NPAN2 Key Action Area 6.3.7 and AoI 3.1.3)</p>					

	<ul style="list-style-type: none"> • Scale up formal and informal nutrition to disseminate knowledge on healthy diets and lifestyle to adolescents • Sensitise school management, school teachers, parent teacher associations Scale up school-based informal nutrition education activities linking with wider platforms such as Nutrition Club, Community Support Groups, Girl Guides and Scouts. • Celebrate annual Nutrition Olympiad • Scale up NCB initiative create awareness on healthy diet and lifestyles among adolescents and youth Disseminate and promote national dietary guidelines 2020 • Enhance health seeking behaviour of adolescents, young and teenage couples linking with School health program/little Doctor program/Adolescent Reproductive & Sexual Health 	LT				<ul style="list-style-type: none"> • BMC • BIRDEM • UN – WFP, FAO, UNICEF, WHO and other DPs • NGOs, INGOs
	<p>3. Update nutrition curriculum (formal/informal) at different levels of academic institutions (in line with NPAN2 Key Action Area 6.3.8, 6.5.2)</p> <ul style="list-style-type: none"> • Update nutrition curriculum at different levels of academic institutions (formal & informal) • Update nutrition content in primary, secondary, medical and nursing curricula. • Develop interactive e-learning on nutrition • Review curricula for inclusion of nutrition education 	MT- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 3: To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements						
Strategy 3.3. Optimise food utilization through provision of safe water, healthy diets and improved food hygiene and sanitation						
3.3.1. Expand programs for immunization, control of acute respiratory infection (ARI), prevention of cholera and diarrhoeal diseases	<p>1. Continue expanding child nutrition services via community-based IMCI</p> <ul style="list-style-type: none"> • Prioritise community-based prevention approach to malnutrition via integration and delivery of ESP within PHC and community clinics • Scale up coverage of immunisation esp. in hard-to-reach rural areas and slums • NNS to provide support for technical interventions under IMCI 	MT- LT	<ul style="list-style-type: none"> • Lower child mortality • Increased EPI coverage 	<ul style="list-style-type: none"> • Under-5 mortality rate • % EPI coverage • Number of children ≤5 years admitted in upazila health complexes, at district-level secondary hospitals and in medical college hospitals for diarrhoea and gastroenteritis of infectious origin (in line with CIP2) 	<ul style="list-style-type: none"> • NIPORT – BDHS • ICDDR, B reports • DGHS, Health Bulletin 	<ul style="list-style-type: none"> • MoHFW- NIPORT, HPNSP, DGHS, NNS, IPHN, BNNC • MoP- BBS • MoWCA • MoA • MoFL • MoFood • City Corporations and selected municipalities • Academia • NIPN • NGOs, INGOs • DPs • Private sector
	<p>2. Strengthen social behaviour change communication (SBCC) to promote consumption of safe food and water for healthy diets and nutrition of children (in line with the 8FYP, NNS OP 10.A.2, NPAN2 6.4.4., CIP2 Programme V.1.4. and NFPNSP Strategy 5.1)</p> <ul style="list-style-type: none"> • Promote positive nutrition through SBCC and sensitisation on uptake of essential nutrition services as well as on food safety and healthy diet (see AoI 3.2.2.), and related complementary issues (water & sanitation, EPI, prevention of NCDs) • Build momentum through joint intersectoral actions around health-seeking behaviour among communities • Enhance health and nutrition awareness through electronic and print media and popular folklore • Continue, adapt and expand production and dissemination of materials on food safety to DLS, DoF and DAE • Expand BFSN work in local communities 	MT- LT				
	<p>3. Strengthen research collaborations to better understand infection-malnutrition interactions</p> <ul style="list-style-type: none"> • Study the impact of infection and sub-clinical conditions on nutrition and child growth/development and the interactions between nutrition and infection • Explore research collaborations with academia and agencies such as ICDDR-B who undertake advanced studies in this area • Further explore the effects of environmental enteropathy and malabsorption on nutritional interventions and early growth/development • Gauge the impact of scaling up preventive and control measures of infections in malnourished children/populations, or those at risk of becoming malnourished 	ST- MT				

3.3.2. Strengthen the implementation of National Nutrition Services (NNS) delivery integrated with community clinics targeting children and women suffering from persistent weakness and micronutrient deficiencies	<p>1. Strengthen availability of dietary data for vulnerable groups suffering from micronutrient deficiencies</p> <ul style="list-style-type: none"> • Include MDD-W in national surveys (e.g., BHDS, SVRS) • Monitor and evaluate impacts of food-based nutrition interventions on improvement of micronutrient status among target groups (adolescents, women, etc.) 	MT- LT	<ul style="list-style-type: none"> • Increase in % of 14- 49 years old women having adequate diets • 90% coverage of vitamin A by 2025 (NPAN2) • 90% coverage of adequately iodized salt (≥ 15ppm) by 2025 (as per NPAN2) 	<ul style="list-style-type: none"> • n. of national surveys collecting data on MDD-W • Coverage of adequately iodized salt and vitamin A supplementation/dosage 	<ul style="list-style-type: none"> • NPAN2 monitoring reports • HPNSP annual reports • INFS reports • Bureau of Health Education reports • BNNC reports • MoA/DAE Reports • BSCIC/ IPHN/ UNICEF – 	<ul style="list-style-type: none"> • MoInd • MoHFW-NIPORT, DGHS, BHE, DGFP, MoP-BBS • MoA-BIRTAN DAE, ATIs, NARS-BARC • MoPME • MoE • MoFL, DLS, DoF • MoLGRD &C • MoFood
	<p>2. Promote food-based approaches within programs to combat micronutrient malnutrition (in line with NMDCS Strategic Area 3.1.2)</p> <ul style="list-style-type: none"> • Strengthen and scale up integrated homestead food production through women -centered community actions in at least 2/3rd households at union levels, through training and better access to seeds, tools and materials • Establish/promote school gardening programs throughout the country 	MT- LT				
	<p>3. Accelerate mainstreaming of nutrition services within the proposed delivery platforms of NNS</p> <ul style="list-style-type: none"> • Continue and increase coverage of micronutrient distribution through food fortification/ supplementation programs for children, adolescent girls and PLW through community based IMCI and community clinics • Establish monitoring mechanisms to ensure compliance 	MT- LT				
3.3.3. Scale up the supply of safe water for consumption and domestic use	<p>1. Promote nationwide supply of safe water to impact household nutrition</p> <ul style="list-style-type: none"> • Scale up piped water supply for the urban poor and tube wells in rural areas with emphasis on underserved, un-served and hard -to -reach areas. • Ensure provision of safe adequate water in health care facilities to prevent infections and spread of disease • Provide safe water supply and training on safe water to schools • Increase targeted distribution of WASH items in emergency programs 	ST-LT	<ul style="list-style-type: none"> • Ensure availability of safe drinking water for all by 2030 (in line SDG 6.1.1) • 95% of schools with access to basic drinking water by 2025 (in line with 8FYP) 	<ul style="list-style-type: none"> • Percentage of urban and rural population with access to safe drinking water [SDG6.1.1] (As per CIP2) • Proportion of schools with access to basic drinking water (in line with SDG: 4.a.1 and 8FYP) 	<ul style="list-style-type: none"> • SDG tracker • MICS • DPHE (APA) 	<ul style="list-style-type: none"> • MoLGRD&C-DPHE, WASA • MoHFW • MoP- BBS • MoHFW - NIPORT, NNS/IPHN, DGHS • MoInd • Municipalities and local bodies • FAO, UNICEF and other DPs • Academia and research institutions
	<p>2. Promote the importance of safe drinking water for prevention of diseases</p> <ul style="list-style-type: none"> • Promote effective low-cost "point of use" traditional interventions • Increase water quantity available to households by promoting more storage facilities and rainwater collection jars/containers 	ST- LT				

	<p>3. Support research development on under-explored areas related to impacts of contaminated water on food safety</p> <ul style="list-style-type: none"> • Improve water quality monitoring (arsenic and saline screening) and surveillance programmes • Upgrade capacities of Pourashavas and WASAs for urban water supply management • Undertake research on underexplored areas related to unavailability of data on arsenic in livestock, freshwater fisheries, water/fodder for livestock and human health risk assessments • Undertake research to inform the uptake of nutrition sensitive interventions like use of saline water for fish/shrimp farming, rice farming and planting of saline-tolerant fruit trees, etc. 	MT-LT				<ul style="list-style-type: none"> • WaterAid and other NGOs • Private sector
<p>3.3.4. Improve sanitary facilities and hygiene practices, including the prevention of animal to human transmission of disease and prevention and control of food and water-borne illness</p>	<p>1. Ensure sanitary and hygienic handling of food at household and community levels with regards to food production, processing, storage, preparation</p> <ul style="list-style-type: none"> • Provide trainings and demonstrations to DLS extension officials at sub national levels (in line with AoI 1.1.2) • Scale up animal husbandry and veterinary services (in line with AoI 5.1.3) • Conduct training and promote education and sensitization/promotional activities among food handlers for safe, sanitary and hygienic food handling practices 	ST-LT	<ul style="list-style-type: none"> • Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water (SDG indicator 6.2.1): 85% by 2025 and 100% by 2030 	<ul style="list-style-type: none"> • Proportion of population using safely managed sanitation services, including a handwashing facility with soap and water (SDG indicator 6.2.1) 	<ul style="list-style-type: none"> • MICS • BBS- SID, SVRS • INGO/NGO/DPs survey reports 	<ul style="list-style-type: none"> • MoHFW • MoLGRD&C-DPHE, WASA • MoIB • MoF- DLS • MoFood • MoE • MoP- BBS • NGOs, INGOs • WHO, FAO, UNICEF and other DPs • Private sector • Municipalities and local bodies
	<p>2. Promote measures to ensure health of animals for safe diets (in line with CIP2 Priority Intervention 1.3.4 and 8FYP)</p> <ul style="list-style-type: none"> • Promote development of protective poultry housing and animal shelter • Promote interventions targeting animal welfare management to ensure healthier animals for healthier diets • Increase field capacity for detecting transboundary animal diseases 	MT-LT				
	<p>3. Establish and promote garbage disposal and recycling of waste for environmental hygiene and human health protection</p> <ul style="list-style-type: none"> • Identify cost-effective interventions involving waste reduction programmes and recycling strategies as a priority. • Support capacity building of stakeholders and conduct public awareness campaigns for improved waste management. 	MT-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders	
OBJECTIVE 4: To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions							
Strategy 4.1 Improve management of the public food stock and distribution system							
4.1.1. Improve decision making and planning of price support to farmers, market stabilisation and public food distribution	<i>1. Improve monitoring of foodgrain prices, stock, domestic production, and imports to inform procurement and PFDS decisions (see AoI 5.3.1.)</i>	ST-MT	<ul style="list-style-type: none"> • Procurement targets are met • Price are stable 	<ul style="list-style-type: none"> • % of procurement target achieved • Indicator IFPA for rice • PFDS distribution as % of target 	<ul style="list-style-type: none"> • FPMU reports • FPMU calculations 	<ul style="list-style-type: none"> • MoFood- DG Food, FPMU • MoA- DAM • MoDMR • MoP- BBS • DPs • NGOs, INGOs 	
	<i>2. Harness the potential of big data analytics to assess foodgrain availability, estimate required foodgrain imports, and set procurement prices and amounts and plan PFDS</i>	ST-LT					<ul style="list-style-type: none"> • Develop capacities – notably of FPMU- to apply modern ICT-based analyses and forecasting • Develop reliable forecasts the use of FAO’s Food Price Monitoring and Analysis (FPMA) • Develop analytical capabilities to make decision on imports • Adopt state of the art methodologies to estimate foodgrain availability and production
	<i>3. Review the methodology to set the procurement price and amounts</i>	ST					
	<i>4. Develop an interministerial coordination mechanism to support decisions</i>	ST					
	<i>5. Adapt PFDS to NSSS priorities and changing approaches to social safety net programmes</i>	ST-MT					
	<i>6. Plan to include nutritious foods under the PFDS</i>	ST					
4.1.2. Enhance the management of procurement, public food stocks and prices	<i>1. Provide better information to farmers</i> <ul style="list-style-type: none"> • Introduce digital display boards in marketplaces Look into other means of dissemination making use of ICTs 	ST-MT	<ul style="list-style-type: none"> • Stock of 1.05 million metric tons of foodgrain are maintained at the beginning of the financial year 	<ul style="list-style-type: none"> • Government stocks at the beginning of the financial year 	<ul style="list-style-type: none"> • FPMU reports 	<ul style="list-style-type: none"> • MoFood • MoA- DAE • MoP- BBS 	

stabilization activities and implement a nutrition sensitive PFDS	<ul style="list-style-type: none"> Educate farmers on procurement requirements 					<ul style="list-style-type: none"> MoDMR MoC MoF Private sector NGOs, INGOs DPs
	2. Expand the use of the digital applications developed for the monitoring of procurement <ul style="list-style-type: none"> Roll out the Krishoker App nationwide Train officials across the country to use the inspection report management software, foodgrain movement programming software and food database introduced by the Directorate of Food 	ST-MT				
	3. Ensure suitable legislation and legislative mechanisms are in place for efficient foodgrain procurement	ST				
	4. Enhance the monitoring of food distribution and management of stocks <ul style="list-style-type: none"> Devise transparent surveillance to monitor food distribution and stocks across the country under a single umbrella Enhance existing digitalized system to monitor stock movement, stock rotation, and storage and transit losses 	ST-MT				
	5. Develop systems to roll out nationally the distribution of non foodgrain foods through PFDS	ST-MT				
4.1.3. Ensure adequate storage of food grain maintaining quality and prevent deterioration of stored foodstuffs in the PFDS	1. Refurbish and construct new warehouses for foodgrain storage considering local needs	ST-MT	<ul style="list-style-type: none"> Increase in storage capacity: up to 3.7 million metric tons by 2025 (as per 8FY) 	<ul style="list-style-type: none"> Public storage capacity 	<ul style="list-style-type: none"> MoFood monitoring 	<ul style="list-style-type: none"> MoFood-Directorate of Food MoDMR World Bank and other DPs
	2. Develop technology-based modern storage facilities (in line with 8FYP) <ul style="list-style-type: none"> Develop vertical storage across the country Focus on intensive production zones and disaster-prone areas to boost response capacity Use modern technology to maintain quality: mechanized bagging systems, weighing and handling equipment and enhanced drying methods while maintaining moisture content and temperature to ensure the quality of stored foodgrain 	ST-LT				
	3. Rollout and distribute stored foodgrain on a regular basis	ST-LT				

	<ul style="list-style-type: none"> • Rotate stocks regularly to prevent quality loss and deterioration of the foodgrain • Upgrade monitoring systems in place at local and national level for smooth rotation of stocks 					
	<p><i>4. Develop storage for new foods to be included in the PFDS that will preserve their quality and attacks from pests</i></p>	ST-MT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 4: To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions						
Strategy 4.2. Improve disaster preparedness, responses, rehabilitation and mitigation						
4.2.1. Increase the resilience of agriculture systems through various mechanisms notably climate-smart technologies, adoption of stress-tolerant crop varieties and implementation of good agriculture, animal husbandry and fisheries practices for the production of healthy food	1. <i>Shortlist technologies and practices for upscaling for each “disaster hotspot” identified in the BDP 2100</i> • Initial list • Second list	ST-MT MT-LT	<ul style="list-style-type: none"> • Adoption of adaptive technologies and practices are upscaled • Improved water management 	<ul style="list-style-type: none"> • Extent of reduction in direct economic loss attributed to disasters in relation to GDP (SDG 1.5.2) 	<ul style="list-style-type: none"> • SDG monitoring 	<ul style="list-style-type: none"> • MoFood • MoDMR • MoA • MoFL • MoL • MoLGRD&C • MoWR- • Bangladesh Haor and Wetland Development Board • MoCHTA
	2. <i>Adopt measures and infrastructure to enhance water management</i> See AoI 1.1.3	ST-LT				
	3. <i>Strengthen extension and advisory services for technologies and practices prioritized for different disaster hotspots</i> See AoI 1.1.1 and AoI 1.1.2	ST-LT				
4.2.2. Increase the disaster-coping ability of poor farming families, support home-based farming especially through <i>Amar Bari Amar Khamar</i> (My Home My Farm), and protect poultry, livestock and other assets	1. <i>Develop a policy-relevant vulnerability index</i>	ST-MT	<ul style="list-style-type: none"> • Policy and planning is informed by risks and vulnerability • Increased homestead agriculture 	<ul style="list-style-type: none"> • Policy-relevant vulnerability index developed • n. of households <i>Amar Bari Amar Khamar</i> 	Project data	<ul style="list-style-type: none"> • MoDMR • MoSW • MoA • MoC • MoF • MoHFW
	2. <i>Promote homestead agriculture</i> • Promote homestead agriculture, especially through implementation of <i>Amar Bari Amar Khamar</i> • Enhance quality and availability of gender-sensitive extension services to support homestead production (see AoI 1.1.2).	ST-LT				

	<p>3. Protect household assets during disasters</p> <ul style="list-style-type: none"> Invest in protecting household agricultural assets and farm machinery, such as by building facilities in shelters and killa (see AoI 4.2.3) Support families with practical measures such as to cover pond embankments with nets to retain fish if ponds overflow in disasters. Increase household and community-based storage facilities. 	ST-LT				
	<p>4. Invest in resilient infrastructure</p> <ul style="list-style-type: none"> Strengthen facilities, such as medical centres and schools, Build more resilient water supply and sanitation infrastructure. 	ST-LT				
	<p>5. Develop insurance schemes</p> <ul style="list-style-type: none"> Facilitate the development of insurance schemes via public-private-NGO cooperation for losses due to disasters and climate change, by developing previous and ongoing efforts 	ST-LT				
4.2.3. Ensure operation of emergency shelters with nutritious and safe food, safe drinking water, sanitation and healthcare for disaster-affected people, especially for women, elderly, disabled and children	<p>1. Invest in emergency shelters, disaster proofing infrastructure and early warning systems</p> <ul style="list-style-type: none"> Build new multipurpose shelters Rehabilitate shelters, and upgrade water, sanitation and healthcare facilities Make buildings for basic public services more resilient Strengthen early warning systems 	ST-LT	<ul style="list-style-type: none"> Greater protection of the population from disasters Shelter design and management more inclusive of gender, elderly, disabled persons and children 	<ul style="list-style-type: none"> n. of usable cyclone shelters (CIP2 indicator) n. of disaster resistant homes built in rural areas to cope with the impact of climate change and disaster risk 	<ul style="list-style-type: none"> MIS SDG monitoring 	<ul style="list-style-type: none"> MoDMR SPARSO Bangladesh Meteorological Department
	<p>2. Use PPPs to increase capacity</p> <p>Draw MoUs between GoB and owners of commercial buildings, as suggested in 2011 Cyclone Shelter Construction, Maintenance and Management Policy</p>	ST-LT				
	<p>3. Enhance capacities and participation in shelter operations</p> <ul style="list-style-type: none"> Increase training on shelter operations and participation of vulnerable groups 	ST-MT				

	<ul style="list-style-type: none"> • Improve the Guidelines for Disaster Shelter Management 					
4.2.4. Facilitate and coordinate disaster response, mitigation and rehabilitation through timely and strategic storage of public food stock, rapid distribution to disaster-affected people, and effective mobilization through various modalities including public-private partnerships	1. Strengthen policies and procedures for disaster management <ul style="list-style-type: none"> • Strengthen policies and procedures for disaster management • Strengthen union and upazila disaster management committees 	ST-MT	<ul style="list-style-type: none"> • Enhanced effectiveness and inclusiveness of emergency food distribution 	<ul style="list-style-type: none"> • Enactment of a legal framework to implement the Standing Orders on Disasters • Change in budget allocation to disaster management 	Project data	<ul style="list-style-type: none"> • MoDMR • MoSW • MoA • MoC • MoF • MoHFW
	2. Enhance pre-positioning of public food stocks <ul style="list-style-type: none"> • Improving the use of data, ICT and early warning methods in locating PFDS • Increase safe storage capacity in remote areas 	ST- MT ST- LT				
	3. Strengthen logistics in disasters <ul style="list-style-type: none"> • Follow-up on 2019 Logistic Preparedness Action Plan 	ST- MT				
	4. Encourage private sector involvement in disasters	ST- LT				
	5. Promote shock-responsive and anticipatory social protection <ul style="list-style-type: none"> • Build on 2019 conference on shock-responsive social protection • Build on 2020 experience of forecast-based social protection 	ST- LT				
	6. Enhance attention to nutrition in disaster management <ul style="list-style-type: none"> • Include Nutrition Coordination Committees in disaster management • Ensure complementary foods for 6-23-month-old children • Strengthen human and monitoring capacities for nutrition in disasters • Include diversified nutrient-dense food in disaster responses 	ST-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 4: To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions						
Strategy 4.3. Strengthen social protection for poor and vulnerable groups, including disabled and displaced						
4.3.1. Strengthen social protection in disadvantaged areas and for disadvantaged groups	1. Expand and consolidate programmes in line with NSSS • Increase coverage of food and cash transfers for those unable to work	ST-LT	• People who are unable to work are covered by social protection	• n. of eligible children in Child Benefit Scheme • % of social protection transfers going to urban areas	• MoFin report on social protection	• MoWCA • MoSW • MoDMR • MoFood • MoCHTA • MoFood-Statistics and Informatics Division • MoF- Finance Division, Financial Institutions Division • MoLGRD&C-LGD
	2. Report social protection coverage and budget data by vulnerable places and by vulnerable groups • Vulnerable places are <i>chars, haors</i> , hill tracts, remote areas and urban slums • Vulnerable groups are poor female-headed households, children, elderly, disabled people, displaced people and minorities	ST-LT				
	3. Include FNS indicators in NSSS management systems	ST-MT				
	4. Initiate Child Benefits Scheme • Initiate in divisions identified in 8FYP • Expand coverage in later years	ST MT-LT				
	5. Increase the use of G2P payments • Initiate G2P fund transfer as stated in 8FYP • Expand G2P progressively	ST MT-LT				
	6. Develop a more comprehensive approach to urban social protection • Increase urban coverage in programmes • Develop national social insurance scheme	ST-MT MT-LT				
4.3.2. Ensure safety nets for the poorest and nutritionally vulnerable, especially female-headed households, during periods of seasonal crises and food shortages	1. Expand coverage of seasonal employment programmes in line with NSSS • Expand coverage • Consolidate programmes • Focus public works on disaster-risk reduction Cover fisherfolk when fishing is banned	ST- LT	• Seasonal FNS is ensured	• n. of beneficiaries in seasonal social protection programmes • Nutrition indicators across seasons produced	• MoF report on social protection • Programme MIS data	• MoDMR • MoFood • All other ministries and agencies involved in social safety net programmer implementation
	2. Continue direct food transfers and subsidized foods • Continue and expand FFP and OMS	ST- LT				

	<p>3. Surveillance of seasonality in nutrition</p> <ul style="list-style-type: none"> • Develop seasonal nutrition monitoring and knowledge • Develop measures against seasonal nutrition vulnerability, especially for “first 1000 days”, adolescent girls, pregnant women and lactating mothers 	ST ST-LT				
<p>4.3.3. Develop and implement nutrition-sensitive social protection programs, including food fortification, nutrition education, and behaviour change communications</p>	<p>1. Scale up the inclusion of fortified rice in the FFP and OMS, diversify the food distributed in social protection programmes, and monitor impacts on nutrition</p>	ST - LT	<ul style="list-style-type: none"> • Improve nutritional status 	<ul style="list-style-type: none"> • Share of fortified rice in PFDS system • n. of students under the school feeding program 	<ul style="list-style-type: none"> • PFDS MIS • MoPME MIS 	<ul style="list-style-type: none"> • MoFood • MoHFW • MoWCA • MoLGRD&C • MoDMR • MoPME • MoF
	<p>2. Enhance the social protection programmes for nutritionally vulnerable women of reproductive age and children during the first 1000 days</p> <ul style="list-style-type: none"> • Expand existing interventions with supplementary nutritional food • Expand the maternity allowance programme 	ST-LT				
	<p>3. Enhance and integrate NBCC into social protection</p> <ul style="list-style-type: none"> • Enhance dietary and nutrition knowledge for all • Disseminate information on dietary knowledge, healthy cooking methods, nutrient dense-recipes, dietary diversity, appropriate IYCF practices, food handling, preservation, storage, food safety issues 	ST - MT				
	<p>4. Expand the School Feeding Programmes in Poverty Prone Areas</p>	ST - MT				
<p>4.3.4. Ensure proper coordination and co-operation to integrate social protection with agricultural development, income generation, and micro-entrepreneurship development</p>	<p>1. Expand and consolidate productive social protection programmes in line with NSSS</p> <ul style="list-style-type: none"> • Re/design programmes towards activities that stimulate agricultural diversification and agro-processing • Scale successful programmes to increase coverage and impact 	ST-LT		<ul style="list-style-type: none"> • Share of social safety net programme budget in GDP • n. of trained young people in income generation 	<ul style="list-style-type: none"> • MoFin report on social protection • Labour Force Surveys 	<ul style="list-style-type: none"> • MoDMR • NSSS Livelihood Cluster • MoLGR&C-LGD, RDCD • MoWCA • MoSW

	<ul style="list-style-type: none"> • Reform and consolidate programmes in coordination with the NSSS Livelihoods Cluster 		<ul style="list-style-type: none"> • People who are able to work are included in productive social protection • Productive social protection programmes and My Village, My Town promote rural transformation in coordinated way 			<ul style="list-style-type: none"> • MoF-Finance Division • MoLE • MoFL
	<p>2. Coordinate productive social protection design with My Village, My Town investments</p> <ul style="list-style-type: none"> • Ensure that productive social protection programmes make use of new opportunities, including in upazila master plans 	ST - LT				
	<p>3. Improve training and skills in productive social protection programmes</p> <ul style="list-style-type: none"> • Implement 2011 National Skills Development Policy • Re/design training for needs of women and young people • Scale up and improve the quality of vocational training programmes. • Encourage private training services 	ST- MT				
	<p>4. Scale-up productive social protection for women and other excluded groups</p>	ST- LT				
	<p>5. Adapt social protection programmes to young people</p>	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation						
Strategy 5.1. Improve food safety, quality control, and awareness of food safety and hygiene						
5.1.1. Ensure conformity and compliance of food safety policies (laws, standards and regulations)	1. Harmonise laws, rules, regulations and standards, agree on a common strategy and define roles <ul style="list-style-type: none"> • Carry out a resource needs assessment • Define the strategic direction for BFSA • Develop a common food safety strategy with clearly defined roles and responsibilities of different agencies/ministries • Harmonise laws, rules, regulations • Ensure guidelines for the implementation of quarantine and import policy orders • Introduce up to life-term imprisonment against the offense of adulterating food and medicinal products. 	ST ST- MT	<ul style="list-style-type: none"> • Common food strategy across agencies and ministries with clear roles • Laws, rules, regulations and standards harmonised across the 15 ministries • Strict guidelines for food safety inspections developed 	<ul style="list-style-type: none"> • National Food Safety Strategy Document developed • n. of accredited food laboratories • Rules/Regulations/Guidelines for Food Safety prepared/coordinated by BFSA 	<ul style="list-style-type: none"> • FPMU monitoring • BFSA reports • HAB reports 	<ul style="list-style-type: none"> • MoFood-BFSA, FPMU • MoST-IPST, Bangladesh Council of Scientific and Industrial Research • MoInd-BAB, BSCIC, BSTI • MoA • MoFI, DoFish • DoL • MoF • Farmer associations • Private sector • CAB • DPs • NGOs, INGO • Academia • INFS
	2. Develop guidelines for food safety inspections <ul style="list-style-type: none"> • Develop a BFSA Standard Operating Procedure for food safety assurance plans • Train port teams to sample/send samples for test in accredited laboratories located in ports • Ensure that guidelines include all the elements of inspection and certification systems for the food production, processing, preparation, marketing and imported foods • Build upon existing initiatives -such as the GFSI- to facilitate trade and export • Ensure legislation clearly establishes authorities required to implement control over non-compliant local/imported food 	MT MT /LT LT				
	3. Strengthen existing capacities and build new ones <ul style="list-style-type: none"> • Promote comprehensive analyst training programmes • Train and recruit more skilled manpower • Provide refresher training to existing staff • Develop expanded network of duly accredited laboratories for food safety and expand services • Strengthen BSTI's capacities 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>4. Strengthen the capacity of the Bangladesh Accreditation Board</p> <ul style="list-style-type: none"> Strengthen BAB to accredit inspection/ certification bodies based on international standards (ISO 17020 and ISO 1702) Support its application for membership to the International Accreditation Forum Promote BAB ability to accredit independent 3rd party inspection Expand the certification and inspection ecosystem in Bangladesh beyond government-owned institutions 	ST- MT MT- LT				
5.1.2. Develop, improve, and establish traceability mechanisms and enforce regulatory frameworks to control food hazards within the food supply chain	<p>1. Develop and strengthen the national food safety control system (in line with NPAN2 Key Strategy 6.2.5, and 6.5.8)</p> <ul style="list-style-type: none"> Explore blockchain as a means to ensuring traceability Look into barriers and challenges to blockchain expansion (e.g., availability of high-speed internet services, capacity to use technology, policies/ regulatory frameworks) Enforce compliance to act/laws/guidelines related to food safety during production/processing/marketing/ preservation National Food Safety Management Advisory Council to support BFSA to strengthen national food safety control system National Food Recall System to empower the authority to enforce provisions associated with food recall and traceability Take legal actions against those in violation of these provisions 	ST- MT ST- LT	<ul style="list-style-type: none"> National PoA on Food Safety/Food Safety Strategy, Guidelines and SOPs prepared Functional BACB Improved food safety practices along the FVC 	<ul style="list-style-type: none"> Existence of National PoA on Food Safety/Food Safety Strategy, Guidelines and SOPs Identified number of violations of food safety standard under FSA 2013 reported by BFSA (CIP2 indicator) n. of trainees on GAP, GAqP, GHP and GMP (CIP2 indicator) 	<ul style="list-style-type: none"> Food safety strategy, guidelines and Standard Operating Procedures BFSA reports MoA and MoFL APA 	<ul style="list-style-type: none"> MoFood- BFSA, FPMU MoInd- BAB, BSCIC, BSTI MoST- IFST MoHFW- IPH MoLGRD&C, MoA- BARC MoFL MoC Farmer associations Private sector BFSN DPs Private sector NGOs, INGOs
	<p>2. Prepare strategy, guidelines and Standard Operating Procedures (in line with NPAN2 Key Strategy 6.5.8)</p>	ST- MT				
	<p>3. Build an ecosystem of accredited independent certification and inspection agencies</p> <ul style="list-style-type: none"> Ensure conformity of foods for consumption through accreditation from certification agencies, inspection and laboratory services 	ST- MT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<ul style="list-style-type: none"> •BFSA to coordinate with private enterprises that are setting up GAP certification services •BAB to provide guidelines and procedures on conformity assessment activities 					
	<p>4. Strengthen linkages with INFOSAN (in line with NPAN2 Key Strategy 6.5.8)</p> <ul style="list-style-type: none"> • Scale up the capacity of the BFSA and build linkage with Codex/INFOSAN and enhance accountability for the Food Safety Law 2013 • Build capacity of the Codex and INFOSAN focal points and enforce measures to ensure food safety along the value chain 	ST- MT				
	<p>5. Strengthen product certification to ensure quality and safety</p> <ul style="list-style-type: none"> • Introduce and scale-up GMP and GHP including adherence to HACCP • Make Bangladesh Agricultural Certification Body which provides Bangladesh GAP Certificate functional 	ST- MT				
	<p>6. Provide training and enable implementation of food safety practices (in line with NPAN2 Key Strategy 6.2.5. and 6.5.8)</p> <ul style="list-style-type: none"> • Develop skill/build capacity to related personnel on food safety • Promote food preservation and effective safe storage • Provide technical support to producers and processors for assurance of food safety along the value chain • Introduce and popularise GAP, GAqP and GHP 	ST- LT				
5.1.3. Develop and promote education and consumer awareness on food safety	<p>1. Develop an extensive field campaign</p>	ST- LT	<ul style="list-style-type: none"> • Consumers informed and aware of best food safety practices for handling, cooking, storing and serving food. • Dissemination of risk assessment studies and reports on food safety nationwide 	<ul style="list-style-type: none"> • n. of consumer awareness forums coordinated with BFSA • n. of Safe Food Campaigns • Risk Assessment Unit established by BFSA 	<ul style="list-style-type: none"> • BFSA reports • FPMU Monitoring . 	<ul style="list-style-type: none"> • MoFood- BFSA, FPMU • MoF • MoA • MoF • MoP- BBS • AUs • Civil society organization
	<p>2. Support and strengthen forums such as CAB and BFSN</p>	ST- LT				
	<p>3. Carry out risk assessment and risk communication</p> <ul style="list-style-type: none"> • BFSA to establish a Risk Assessment Unit • Define clear roles and responsibilities for risk assessment, risk management and communication. • Devise training plan for food inspectors 	ST				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
						<ul style="list-style-type: none"> • Communities • Consumers' Associations • BFSN • Cooperatives • Private sector • CAB • DPs • NGOs, INGOs

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation						
Strategy 5.2. Reduce food losses and waste						
5.2.1. Minimise on-farm food losses	1. Formulate a National Strategy on Food Loss and Waste (as per 8FYP)	MT	<ul style="list-style-type: none"> National Strategy on Food Loss and Waste formulated Climate smart technologies developed and disseminated to farmers even in the most remote areas of the country By 2021 50% reduced post-harvest losses by 2025 (as per NAP PoA 2020 Key area of intervention 2.1.1) In 100 upazila by 2022, reduction in post-harvest losses: 	<ul style="list-style-type: none"> National Strategy on Food Loss and Waste formulated On-farm loss for main commodities n. of farmers trained on FLW 	<ul style="list-style-type: none"> MoFood and FAO reports of FLW monitoring DAE and MoFL reports 	<ul style="list-style-type: none"> MoFood-FPMU MoA- DAE, DAM MoFL MoP- BBS NARS institutes including BLRI, BFRI, BARI, BINA Agricultural University CIMMYT ICRISAT Farmer associations
	2. Provide tools to improve timing of harvest	ST- LT				
	<ul style="list-style-type: none"> Expand availability of tools (moisture meters, smart meters for maturity measurement) Provide better access to market and weather information Improve farmers' skills and knowledge Set up local information networks (see AoI 1.1.1.) 					
3. Promote mechanisation and affordable loss-reducing technologies (as per AoI 1.1.1.)	ST- LT	<ul style="list-style-type: none"> Expand usage of combine harvesters and other agricultural harvesting and cultivation equipment Encourage investments in flatbed dryers to use rice hull as fuel in order to reduce biomass waste Develop on-site farm waste processing technologies Use recyclable waste from fishers to produce quality feed (see AoI 1.1.6). 				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<ul style="list-style-type: none"> • Promote the use of intelligent decision-making tools, sensor technologies, and new processing technologies to recover and make use of edible portions of food • Strengthen GAP and GAqP • Develop/ promote post harvest treatments (e.g. hot water treatment for disinfection, techniques to inhibit sprouting of items such as potatoes or onions, fungicide application (see AoI 1.2.2)) in collaboration with private sector • Develop solid basement and/or control zones development near fish catching points • Create an environment that promotes FLW reduction: e.g., access to finance (see AoI 1.1.4); stable supply of electricity and water 		20% by 2023; 40% by 2026 and 60% by 2030 (as per NAP PoA 2020 Key area of intervention 2.1.2) <ul style="list-style-type: none"> • SDG 12.3.1, monitored on a regular basis 			<ul style="list-style-type: none"> • Information and Advice Centres (FIACs) • Private sector • NGOs, INGOs • FAO and other DPs
	<p>4. Encourage the development and adoption of climate smart technologies and practices (as per AoI 1.1.1.)</p> <ul style="list-style-type: none"> • Promote investments in research of varieties that can resist acute climate events, resist pest and diseases and better withstand harvest (as per AoI 1.1.1.) • Develop/ disseminate improved seed varieties with short-lived and flood-tolerant features to allow <i>haar</i> farmers to harvest before a flash flood 	ST- LT				
	<p>5. Improve and develop on-farm storage (see AoI 2.1.1.)</p> <ul style="list-style-type: none"> • Improve existing storage conditions and expand modern food storage facilities, esp. for perishables • Provide finance to individual farmers to help them access refrigerated units (as per AoI 1.1.4) • Expand fresh fish storage in improved fish containers such as styrofoam boxes • Construct community storage of grains in each Union (as per NAP PoA 2020 Key area of intervention 2.1.1 and 2.1.2) • Develop Low cost Zero Energy Cool Chambers • Increase capacity of licensed warehousing to help farmers store their produce safely and economically • Promote development of specific types of storage for certain commodities 	ST- MT				
		ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>6. Shorten value chains (in line with CIP2 MR20 Programme 5.2)</p> <ul style="list-style-type: none"> Minimise number of intermediaries between the time food is produce to the moment it sold to the consumer Strengthen the role of POs and cooperatives (1.1.9) and promote inclusive cooperative/group-based processing and marketing (AoI 2.2.4) Encourage consumption of local produce (AoI 1.2.3.) 	ST- LT				
	<p>7. Involve and sensitise all value chain stakeholders to develop solutions (see AoI 5.4.2)</p> <ul style="list-style-type: none"> Create multi-stakeholder networks Make international connections to learn from other countries' experience Promote training and field demonstration programmes to sensitise producers to the issue of losses Carry out studies to help plan activities across the supply chain structure and identify critical loss points, their causes and the likely solutions to address causes 	ST- MT				
	<p>8. Improve data available on farm food losses</p> <ul style="list-style-type: none"> Adopt pilot and apply the recently approved methodology on SDG 12.3.1. Improve and harmonise data eco-system enabling production and computation of relevant indicators along with proper monitoring and reporting mechanisms in place Ensure that agriculture and rural statistics -including information on food losses- are coherent, reliable, internationally comparable as per the Bangladesh Strategic Plan of Agricultural Statistics (2016-2030) Strengthen the statistical capacity to produce FLW-data (see AoI 5.3.2) Examine both quantitative (or physical) FLW and qualitative (nutritional as well as economic) FLW Involve private sector in monitoring of FLW 	ST- MT ST- LT				
5.2.2. Reduce off-farm losses	<p>1. Develop, invest and apply appropriate technologies (in line with Bangladesh's Delta Plan 2100)</p> <ul style="list-style-type: none"> Encourage simple innovations e.g., replacing sacks by plastic crates and alternative packaging techniques Modernise public warehouses and expand private storage, cold storage in particular Modernise domestic slaughterhouses & live birds/ fish markets 		<ul style="list-style-type: none"> Same as 5.2.2. All actors of the food VC sensitized to the issue of food losses 	<ul style="list-style-type: none"> Off-farm losses for large and medium FVCs n. of cold storage units 	<ul style="list-style-type: none"> MoFood and FAO reports of FLW monitoring DAE, BBS Statistical Yearbook 	<ul style="list-style-type: none"> MoFood FPMU MoA- DAE, DAM MoFL MoP- BBS MoLGR&D-LGED

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<ul style="list-style-type: none"> Expand controlled atmosphere storage, modified atmosphere storage, heat treatments, use of ethylene scrubbers/ ethylene inhibiting compounds, postharvest fungicides, sanitizers, biotechnological tools for perishable horticultural commodities Draw on other countries' experiences 			<ul style="list-style-type: none"> available (CIP2 indicator) % of upazila and union road network in good and fair condition (CIP2 indicator) 	<ul style="list-style-type: none"> LGED reports 	<ul style="list-style-type: none"> Farmer associations Chambers of Commerce Information and Advice Centres (FIACs) Private sector NGOs, INGOs FAO and other DPs
	<p>2. Increase food processing capacity</p> <ul style="list-style-type: none"> Promote simple technologies such as drying as well as secondary and tertiary processing 	ST- MT				
	<p>3. Improve transport infrastructure (in line with AoI 2.1.1.)</p> <ul style="list-style-type: none"> Improve transportation infrastructure Develop transport with cooling and ventilation systems Develop intermodal transport connections and networks & other means of transport, notably inland water transport 	ST- LT				
	<p>4. Create an enabling environment for FLW reduction with focus on the private sector</p> <ul style="list-style-type: none"> As for on farm food loss reduction (see AoI 5.2.1), ensure that basic conditions and incentives are in place to attract stakeholder' attention to act on food loss reduction (AoI 2.2.2 and AoI 2.2.3): finance, regular water and energy supply, transport Facilitate technological transfers and knowledge on food losses (AoI 5.5.3) Ensure rules, regulations and standards are in place & enforced (AoI. 5.1.1). 	ST- LT				
	<p>5. Involve all value chain stakeholders to develop solutions and sensitise them to the issue of food losses</p> <ul style="list-style-type: none"> Encourage multi-stakeholder involvement for solutions/ draw from existing experiences (AoI 5.2.1) Document best practices and engage communities in planning and implementation Sensitise actors along the value the chain to the relevance of this problem (as advocated for in (A.1 5.2.1 and 5.2.3.) and impart training on how they can contribute to minimise it 	ST- MT				
	<p>6. Improve data available on non-farm food losses See intervention 9 in AoI 5.2.1</p>	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
5.2.3. Tackle food waste	<p>1. Sensitise people to the problem of food waste and to the measures that can be taken</p> <ul style="list-style-type: none"> • Continue campaigns to educate • Target children and youth • Raise awareness on portion or serving sizes and standardized food preparation quantities in homes and in institutional food service • Focus on “Plate” waste in hospitals, canteens, school cafeterias, restaurants and hotels and event organisers • Provide training on how to conserve and preserve food • Promote public campaigns and advocacy such as the UN International Awareness Day on FLW • Consider adoption of foreign innovative initiatives 	ST- LT	<ul style="list-style-type: none"> • Mandatory nutrient labelling and product information on at least 50% of all food products sold in urban market 	<ul style="list-style-type: none"> • n. of domestic processed foods with nutrient labels 	<ul style="list-style-type: none"> • MoFood and FAO reports of FLW monitoring • BSTI reports 	<ul style="list-style-type: none"> • MoFood-FPMU, BFSA, Directorate of Food, BSTI, • MoInd • MoE • MoPME • MoC • MoIB • MoHFW • MoEFCC • MoP- BBS, ICT Division • FAO and other DPs • NGOs, INGOs • CAB • Civil society • Private sector • Federation of Bangladesh Chambers of Commerce and Industries • Metropolitan Chamber of Commerce and Industry • Dhaka Chamber of Commerce and Industries, Bangladesh • Supermarket Owners’ Association
	<p>2. Labelling (see Aol 2.3.1 and 3.2.1)</p> <ul style="list-style-type: none"> • Ensure nutrient labelling and product information on foods • Participate/contribute to the current debates • Adapt laws and regulations/ give incentives and training especially to MSMEs involved in value chain 	ST- MT				
	<p>3. Support technological innovations to ensure re-use and repurposing of waste</p>	ST- LT				
	<p>4. Introduce innovative/modern solutions for waste reduction through mobile applications and networking</p>					
	<p>5. Improve data available on waste</p> <ul style="list-style-type: none"> • Monitor food waste situation in different settings of the country (see Strategy 5.3) and notably Food loss percentage (FLP) for different food commodities, Food Loss Index (FLI) for different food commodities, FLI aggregated for food losses at national level, national recycling rate (tons of material recycled) SDG 12.5.1 • Include physical, nutritional and economic waste 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation						
Strategy 5.3. Improve data, information and analysis for evidence-based planning, monitoring, evaluation, and update of policies and programs through wider partnerships						
5.3.1. Produce/generate, disseminate and ensure access to reliable and timely FNS data and information by setting up an inter-agency FNS data sharing mechanism	1. Set up a FNS data strategy for a comprehensive network of FNS information systems Perform a comprehensive FNS data assessment <ul style="list-style-type: none"> Enhancing the role of BBS in collecting, compiling and disseminating statistical data Develop agreements and protocols for data exchange between different institutions 	ST ST-LT	<ul style="list-style-type: none"> Agreements and protocols for data exchange are devised and implemented Institutional capacity and budgets of FNS-collecting agencies increased FNS institutional framework for data management built 	n. of protocols for FNS data generation/exchange approved by BBS	<ul style="list-style-type: none"> Reports of relevant agencies 	<ul style="list-style-type: none"> MoP- BBS Agricultural wing MoFood-FPMU MoA- DAM MoF MoFL- DoF, DoL MoEFCC- BFD MoP- BBS Agricultural Wing, IMED MoA- DAM MoF, ERD MoFL- DoF, DoL MoHFW- IPHN PMO, BNNC MoD- SPARRSO FAO and other DPs LCGs
	2. Strengthen capacity and budget allocation of all FNS data collecting agencies through RBM approach <ul style="list-style-type: none"> Strengthen capacity of BBS agricultural wing, DAM, DoF, DoL, DoForestry Increase budget allocation of BBS agricultural wing, DAM, DoF, DoL, DoForestry Adopt RBM approach to assess institutional needs and gauge activity planning of different agencies involved Strengthen M&E function within data collecting agencies 	ST-LT				
	3. Leverage HiH initiative by building on existing FNS institutional framework for data management <ul style="list-style-type: none"> Build on success of existing FNS national data management systems Integrate HiH with SPARS SPARRSO AIMS, NIPN and FPMC 	ST-LT				
	4. Integrate the Aid Information Management System (AIMS) with the HiH and investment planning <ul style="list-style-type: none"> Integrate AIMS with the new CIP, NIPN and HiH relevant data 	ST-LT				
5.3.2. Develop and implement a big data analytics ecosystem for the food system	1. Develop human resources to harness the opportunities offered by big data analytics <ul style="list-style-type: none"> Carry out training needs assessment for FNS related institutions Deliver trainings to FNS -related staff 	MT-LT	<ul style="list-style-type: none"> Big data analytics are fully in use across the different units of the government working in FNS 	<ul style="list-style-type: none"> Frameworks governing data access and use for all government institutions collecting and/or 	<ul style="list-style-type: none"> Reports by the relevant agencies 	<ul style="list-style-type: none"> MoP-BBS Agricultural Wing, IMED MoA- DAM MoF
	2. Develop a big data governance framework	MT-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<ul style="list-style-type: none"> Establish frameworks governing data access and use for all government institutions collecting and/or storing agricultural/ FSN data (in line with the e-Government Master Plan for Digital Bangladesh 2019 and the PP2041) Adjust regulatory and governance framework (see AoI 2.1.4) and ensure private data protection 		<ul style="list-style-type: none"> Functional big data governance framework established HiH benchmark indicators created by 2023 and monitored thereafter 	<ul style="list-style-type: none"> storing agricultural/ FNS data in place Existence and monitoring of HiH benchmark indicators 		<ul style="list-style-type: none"> MoFL- DoF, DoL MoEFCC, DoForestry MoFood MoHFW, BNNC MoFood SPARRSO FAO Private organisations
	<p>3. Combine big data with spatial data</p> <ul style="list-style-type: none"> Leverage HiH initiative and SPARRSO activities (see AoI 5.3.1) to integrate big data with spatial data Consider and pilot a system of incentives for the provision of farmer level data in order to obtain data in synergy with rural digitalization and financial inclusion 	ST- LT				
	<p>4. Facilitate the connection of ICT industry with Nutrition Sensitive Value Chains</p> <ul style="list-style-type: none"> Ensure that FNS-related government actors have ICT units able to effectively implement Digital Bangladesh (in line with the e-Government Master Plan for Digital Bangladesh (2019) and the PP2041) Exploit investment potential of private sector through PPPs 	ST- LT				
<p>5.3.3. Operationalise implementation of the NFNSP 2020, its Plan of Action and Country Investment Plan through an effective M&E system</p>	<p>1. Design a third CIP for local sustainable and modern food systems</p> <ul style="list-style-type: none"> Carry out extensive consultations among stakeholders Involve new FNS partners Assess the inclusion of multiple data sources (including non-structured ones) 	ST-LT	<ul style="list-style-type: none"> The new CIP formulated FNS Programme is embedded within MoHFW and MoFood programmes Monitoring outputs are produced and utilized by multiple stakeholders 	<ul style="list-style-type: none"> The new CIP produced and operationalised 	<ul style="list-style-type: none"> The new CIP MoFinance budget allocation reports The new CIP yearly monitoring reports 	<ul style="list-style-type: none"> MoFood-FPMU MoP- BBS Agricultural Wing, Demographic Wing and National Accounting Wing, IMED MoA- DAM MoF MoFL- DoF, DoL MoEFCC- DoForestry FPMC, FPWG, TTs Local level institutions
	<p>2. Set up a unified institutional framework for NFNSP PoA, SDGs and the new CIP</p> <ul style="list-style-type: none"> Involve new FNS partners and stakeholders especially at local level Identify new ways of involving DPs not only through LCGs but also more operationally 	ST-LT				
	<p>3. Strengthen the monitoring framework leveraging on existing initiatives and synergizing with the private sector</p> <ul style="list-style-type: none"> Engage with various FNS stakeholders through consultations or surveys to establish roles, commitments and expected monitoring outputs Synergize with other ongoing initiatives such as SUN movement, HiH, AMIS 	ST-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
						<ul style="list-style-type: none"> • FAO and other DPs • Relevant LCGs • HiH • AMIS • SUN GoB focal point in Bangladesh • Related SUN Networks • Private sector
5.3.4. Ensure the cross-sectoral integration of the NFNSP, PoA and its investment plan with other FNS-related initiatives and its coherence with national socio-economic development efforts	1. Set up a unified institutional framework for NFNSP PoA, SDGs and the new CIP <ul style="list-style-type: none"> • See Action 2 of AoI 5.3.3. 	ST-LT	See AoI 5.3.3. and 5.5.1			
	2. Strengthen the cross-sectoral integration of NFNSP PoA and its investment plan by leveraging on existing initiatives and synergizing with the private sector <ul style="list-style-type: none"> • See Action 3 of AoI 5.3.3. 	ST-LT				
	3. Strengthen capacities of BFSA, Bangladesh National Council, and Food Planning and Monitoring Unit <ul style="list-style-type: none"> • See Actions 1, 2 and 3 of AoI 5.5.1 	ST-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation						
Strategy 5.4 Strengthen regulatory management, climate resilience and gender roles						
5.4.1: Develop and implement effective regulatory instruments and guidelines for priority issues	1. Adopt consistent practices of integrated nutrient, pest, and crop management • Orientation of extension workers on GAP • Training of farmers on GAP	ST-LT	<ul style="list-style-type: none"> • GAP widely adopted • Reduction in premature mortality from NCDs by a third by 2030 relative to 2015 levels (in line with target under SDG 3.4) 	<ul style="list-style-type: none"> • n. of courses delivered on GAP (as per CIP2 MR) • Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease 	<ul style="list-style-type: none"> • Agriculture Statistics • NCD surveillance 	<ul style="list-style-type: none"> • MoA- DAE • MoHFW- IEDCR, IPHN • MoWCA, NCDC, DGHS • MoP- BBS • MoInd- BSTI • MoLaw • MoFood- FPMU, BFSa • MoF • BNNC • MoIB • MoC • icddr,b • BBF • WHO/ National Institute of Preventive and Social Medicine
	2. Strengthen monitoring and enforcement system under the BMS Act (as per NPA2) • Increase awareness in the community on exclusive breastfeeding for the first 6 months followed by appropriate complementary feeding after 6 months • Initiate penal action against promoters and advertisers of BMS • Train adequate human resource to generate awareness at the community level • Create an enabling environment for women to breastfeed at the workplace and in public spaces	ST- MT				
	3. Enact a Right to Safe Food Act	ST				
	4. Develop regulations with guidelines for enforcement to prevent and control NCDs • Implement OPs of 4 th HPNSP (2017-22) and Multisectoral Action Plan for prevention & Control of NCDs (2021-25) • Develop guidelines for nutrition labelling • Develop guidelines/standards limiting high sugar, salt, and fat, and banning industrial trans fats • Ban advertisement of ultra-processed and unhealthy foods targeting children • Impose tax on sugar sweetened drinks, and ultra-processed junk foods • Carry out awareness campaigns through print and electronic media	ST-MT				
	5. Formulate enforcement rules under the Competition Act (2012) • Formulation rules Generate awareness on the Act	ST-MT				
5.4.2: Strengthen gender	1. Strengthen the capacity of BBS to disaggregate data by gender and social groups	ST-MT	<ul style="list-style-type: none"> • Availability of gender disaggregated data to 	<ul style="list-style-type: none"> • Data by sex and social groups 	<ul style="list-style-type: none"> • Survey Reports 	<ul style="list-style-type: none"> • MoP- BBS • MoL

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
mainstreaming for food and nutrition security	2. Promote access to land by women <ul style="list-style-type: none"> Digitise land records with joint title Register government khas land distributed to landless in women's names or joint names Prioritise poor, destitute and physically challenged women in distribution of <i>khas</i> land Include women in Management of Sairat Mahal (e.g. Jal-Mahal, Sand Mahal, Stone Mahal, Shrimp Mahal) Sensitize officials in the MoL on gender issues 	ST-MT	design effective policies for FNS • Women have access to land in line with gender strategy of 8FYP	• n. of land records digitised with joint title • Women's Empowerment in Agriculture Index	• Land records with joint title • Policy document • Document • Survey Report / Impact • Assessment Report • Survey Assessment	• MoA • MoP • MoFL • MoLaw • MoFood- FPMU • MoF • Private sector • DPs • NGOs, INGOs
	3. Ensure wage parity for similar agriculture work done by men and women	ST				
	4. Mainstream gender in agriculture extension and scale up Agriculture, Nutrition, and Gender Linkages (ANGeL) initiative	ST-MT				
	5. Integrate gender dimension into food loss prevention strategies (see Strategy 5.2)	ST-MT				
5.4.3 Develop and promote climate-resilient food systems	1. Establish National Environment Management Council (NEMC) <ul style="list-style-type: none"> Formalise constitution of NEMC Constitute NEMC 	ST	• Mangrove area increased by 50,000 ha by 2025 (8FYP target) • Strategy for Green Growth in Food Systems	• Mangrove area • Green Growth Strategy	• NEMC reports • Green Growth Strategy • GHG emissions	• PMO • MoEFCC • MoL • MoA • MoF&L • MoLGRD&C • MoF • MoP • MoFood • MoF&L • MoIB • MoFA • Private sector • DPs • NGOs, INGOs
	2. Restore mangroves in coastal areas <ul style="list-style-type: none"> Develop plan for restoring mangroves along the lines of the ICBA-AR project and roll out 	ST-MT				
	3. Examine and learn from green growth strategies for food and agriculture <ul style="list-style-type: none"> Study best practices on green growth in food systems and climate resilience and develop strategy Update NDC with target for reducing GHG emission from agriculture 	ST-MT				
	4. Operationalise Climate Fiscal Framework 2020 <ul style="list-style-type: none"> Develop and operationalize innovative climate finance schemes Engage with private sector for financing climate resilient food systems Build capacity and demonstrate pilots in partnership with NGOs/CSOs 	ST-MT				
	5. Take the lead in addressing climate resilience on the international scene	ST-LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
OBJECTIVE 5: To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation						
Strategy 5.5. Strengthen FNS governance, policy coherence, capacity strengthening and leadership across stakeholders						
5.5.1. Strengthen policy uptake, FNS leadership and institutional capacity of relevant secretariats and public institutions	<i>1. Strengthen capacities of the BFSA</i>	ST- LT	<ul style="list-style-type: none"> • Strengthened BFSA • Strengthened BNNC • Strengthened FPMU • More effective capacity strengthening 	<ul style="list-style-type: none"> • Improved capacity indicators for BFSA/BNNC/FPMU to be determined by the respective capacity strengthening project • Annual monitoring report • Alignment between Monitoring Reports and pipeline projects • n. of different organisations in the LCGs on ARDFS and DER 	<ul style="list-style-type: none"> • BFSA • BNNC • FPMU • Annual report • Monitoring Reports • LCG minutes of meetings 	<ul style="list-style-type: none"> • BFSA • PMO, BNNC • FPMU • PMO, BNNC • BFSA • IPH • DPs
	<i>2. Strengthen capacities of the BNNC</i>	ST- LT	<ul style="list-style-type: none"> • FNS investments closer to NFNSP and NNP 			
	<i>3. Strengthen capacities of the Food Planning and Monitoring Unit</i>	ST- LT	<ul style="list-style-type: none"> • Wider and active participation in LCGs 			
	<i>4. Assessment and monitoring of FNS governance system</i>	ST-LT				
	<i>5. Use the FNS CIP Monitoring Reports as well as NPAN 2 Monitoring Reports to annually re-align FNS investments to NFNSP goals</i>	ST- LT				
	<i>6. Broaden participation of Local Consultative Groups (LCG) on ARDFS, DER, Health, Population and Nutrition</i>	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
5.5.2. Strengthen the capacities at subnational level including local government, non-state actors and consumer associations by facilitating knowledge exchange and partnerships	<p>1. Review and assess the role of local institutions in achieving FNS</p> <ul style="list-style-type: none"> Map local institutions, record and categorise their relevant activities Examine service delivery capacity of different actors and identify their current/potential engagement Gauge bottlenecks in local level operation and management Examine role of public offices and local government authorities' and their capacity constraints 	ST	<ul style="list-style-type: none"> Local government authorities play a greater role as regulator and coordinator 	<ul style="list-style-type: none"> n. of functional subnational FNS activities including state, non-state and consumer associations n. of collaborative platforms between local actors 	<ul style="list-style-type: none"> FPMU monitoring 	<ul style="list-style-type: none"> MoFood, FPMU All ministries involved in FNS, at national and subnational level Local level private sector NGOS, INGOs NGO Affairs Bureau Consumer associations DPs Private sector
	<p>2. Develop a capacity development plan along with learning resources</p> <ul style="list-style-type: none"> Organise development orientation training course design for local leaders, enablers and public officials Develop learning materials, trainers, demonstration resources Supply guidance planning, implementation, monitoring and evaluation of local level implementation of national, multi-sectoral, sectoral and locally initiated FNS development efforts Support for better function of FNS networks Establish coordination committees 	ST- LT				
	<p>3. Implement a capacity enhancement strategy for FNS stakeholders including measures to promote partnerships and collaboration</p> <ul style="list-style-type: none"> Organise workshops and training programmes, including exchange visits, fellowships and human resource time sharing Promote partnerships and collaboration between local stakeholders: government or non-state (civil society and private sector organizations) and consumer associations Develop formal communication mechanisms and information exchange facilities Create and operationalise collaborative platforms Establish a monitoring, evaluation and learning mechanism 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
5.5.3. Strengthen private sector capacity by promoting the transfer of technologies and knowledge	<p>1. Identify bottlenecks and catalysts of knowledge and technology transfer to the private sector</p> <ul style="list-style-type: none"> Identify characteristics of different private agents that can thwart or encourage transfers to/ adoption by private sector Identify economic, structural, behavioural and policy factors that may influence private agents to adopt -or not- new technologies (e.g. lack of land property rights) Find exogenous factors that can have a role in facilitating knowledge transfer Look into types of demand from consumers that will influence whether actors along the food chain are willing to adopt more advanced technologies 	ST- MT	<ul style="list-style-type: none"> Changes in relevant policies towards strengthening private sector capacity by promoting the transfer of technologies and knowledge Technology Villages in all upazilas by 2023 (as per AoI 1.5.2 of the NAP PoA 2020) Increased involvement of private sector in extension 	<ul style="list-style-type: none"> Changes in policies n. of Technology Villages across the country 	<ul style="list-style-type: none"> FPMU monitoring 	<ul style="list-style-type: none"> MoFood, FPMU MoST, IFST MoA-DAE, district level agricultural officers. MoFL, DoF NARS and other public research institutions Other research institutions and universities Private sector FAO, IFAD and other DPs NGOs, INGOs
	<p>2. Conduct a policy review in view of updating the National Science and Technology Policy 2011 and streamline other relevant existing policies</p>	ST				
	<p>3. Enhance access to extension advice through innovations and use of digital technologies</p> <ul style="list-style-type: none"> Establish technology village in all upazilas (as per AoI 1.5.2 of the NAP PoA 2020) Strengthen capacity of extension services and update their knowledge Use ICTs for extension service delivery, especially for hard-to-reach users Make use of PPPs in the provision of extension services to farmers. Increase public-private coordination to accelerate dissemination of technologies developed by the public sector and NARS in particular Promote cooperatives to help smaller actors engage with suppliers and research institutions (as per AoI 1.1.9) 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>4. Promote international technology transfers</p> <ul style="list-style-type: none"> • Seek partnerships with other countries in order to promote North-South and South-South transfers • Strengthen partnerships with CGIAR institutes and other relevant institutions and promote South-South partnerships (in line with NAP PoA 2020 AoI 3.3.4, 3.3.5, 3.3.6) 	ST- LT				
	<p>5. Improve the investment climate</p> <ul style="list-style-type: none"> • Consider changes in law and regulations • Undertake required public investments such as infrastructure (roads, markets) to create an environment that is appealing to investors 	ST- LT				
5.5.4. Establish frameworks for national and subnational FNS stakeholder partnerships to ensure mutual accountability, transparency and effectiveness and operationalise an umbrella organization for the active engagement of stakeholders, especially youth	<p>1. Harmonise of the understanding of the goals and objectives of the NFNSP</p> <ul style="list-style-type: none"> • Build capacity and carry out advocacy activities across all sectors of society • Sensitise different stakeholders to their social responsibility -especially youth 	ST- MT	<ul style="list-style-type: none"> • Partnerships in place uphold set standards, ensure value for money and produce expected results • Number of PPP relating to FNS increases • Increased cooperation between government and NGOs • Functional umbrella organisation in place • Large numbers and varied types of organisations participate in the FNS debates of the country through the umbrella organisation setup 	<ul style="list-style-type: none"> • USD size of FNS projects involving Government and NGO partners • n. of members in FNS umbrella organization 	<ul style="list-style-type: none"> • PPPA Annual Reports • FPMU monitoring 	<ul style="list-style-type: none"> • MoFood, FPMU • PMO- PPPA • Ministries involved in NFNSP • Private sector • Federation of Bangladesh Chambers of Commerce and Industries • Metropolitan Chamber of Commerce and Industry • Dhaka Chamber of Commerce and Industries • Bangladesh Supermarket Owners' Association • Edible Oil Industry
	<p>2. Establish rules for partnerships, an accreditation system and monitoring</p> <ul style="list-style-type: none"> • Appoint focal point officials in line ministries and departments • Define rules and obligations in partnerships • Create an accreditation system to guarantee standards in partnership exchanges • Regularly assess standards, effectiveness and efficacy of partnerships • Establish simple coordination system through MoUs 	ST- LT				
	<p>3. Raise the profile of the PPP programme and promote increased flow of private investment (as per Strategic Objective 3 of the PPPA APA)</p> <ul style="list-style-type: none"> • Raise profile of PPPs and put incentives in place to encourage private investment contributing to the NFNSP (see AoI 2.3.3.) • Develop a legal and regulatory framework as per the PPP Act 2015 • Limit bureaucracy in establishing partnerships • Draw upon other countries' experience 	ST- LT				

Area of Intervention	Activities	Time frame	Targets	Indicators	Means of verification	Responsible actor and stakeholders
	<p>4. Expand cooperation with NGOs especially for nutrition services</p> <ul style="list-style-type: none"> Promote partnership with NGOs to expand the reach of community clinics in rural areas and in urban areas to address urban nutrition with targeted emphasis on slum areas Exploit the widespread networks of NGOs even in most remote areas 	ST-LT				<ul style="list-style-type: none"> DPs LCG AFSRD Research Organisations Universities NGOs and INGOs NGO Affairs Bureau
	<p>5. Establish and operationalise an umbrella organisation</p> <ul style="list-style-type: none"> Create umbrella organisation to streamline the considerable FNS effort taking place through NGOs, academia, research institutions, other CSOs, and the private sector, both at subnational, national and international level Obtain consensus on the best setup in terms of purpose and role, size, location, structure, role and governance Actively engage stakeholders such as associations, clubs, foundations, platforms and other institutions, especially youth Allocate resources for the setup of this institution and its operationalization Ensure regular and durable funding 	ST ST-LT				

8. Responsible Actors and Coordination

Responsible Actors and Stakeholders

The matrices in Chapter 7 list, for each AoI, the main responsible government agency as well as the stakeholders. Figure 4 maps this, reflecting the complexity of the food system²⁶³. MoFood, MoA, MoFL, MoF and MoLGRD&C figure in the five Objectives. The private sector, also key to meeting the goals of the NFNSP has a vital role to play under each Objective and includes farmers, food processors, retailers as well as all the other actors involved along the value chain (e.g., transporters, storage owners), operating in different forms – big companies, MSMEs, cooperatives, etc. Research plays a role under each Objective with the involvement of national and international institutions, including universities. R&D emanating from private actors is also key in Bangladesh and needs to be incentivised and knowledge exchange between different stakeholders promoted. Civil society and NGOs also holds an important role across the PoA. Finally, DPs support a wide range of food security initiatives across the five Objectives of the PoA, mostly in partnership the government and NGOs.

In order to ensure the availability of safe and nutritious food -Objective 1-, responsibility for implementation lies mainly with MoA, MoFL and for specific AoIs, with the Ministry of Water Resources (MoWR) and MoLGRD&C (for the promotion of water-efficient and environmentally friendly alternative irrigation technologies) and MoPEMR (to estimate the potential contribution of the Blue Economy). Research -both public through the NARS institutes, agricultural universities and private sector- plays an important role in developing new technologies and improving crop varieties, animal breeds and fisheries towards enhanced sustainability, diversity and nutrient content. International organisations such as the CGIAR institutes also contribute significantly to technology generation and dissemination. As stressed in the NAP PoA 2020, NGOs also substantially contribute to implementing agriculture sector-based programmes at the grassroots level.

To ensure access to safe and nutritious food at an affordable price -Objective 2- MoInd, MoC, MoA, MoFood, MoLGRD&C and the Ministry of Planning (MoP) through BBS, play leading roles although several other ministries are involved. Likewise, the private sector is a key partner in nutrition sensitive food processing, value addition and in creating earning opportunities along the FVC. Banks and MFIs also feature in this objective for their role in providing the means to invest in food processing businesses. NGOs are key in the promotion of income generation activities as well as in the development and empowerment of women and the provision of microcredit.

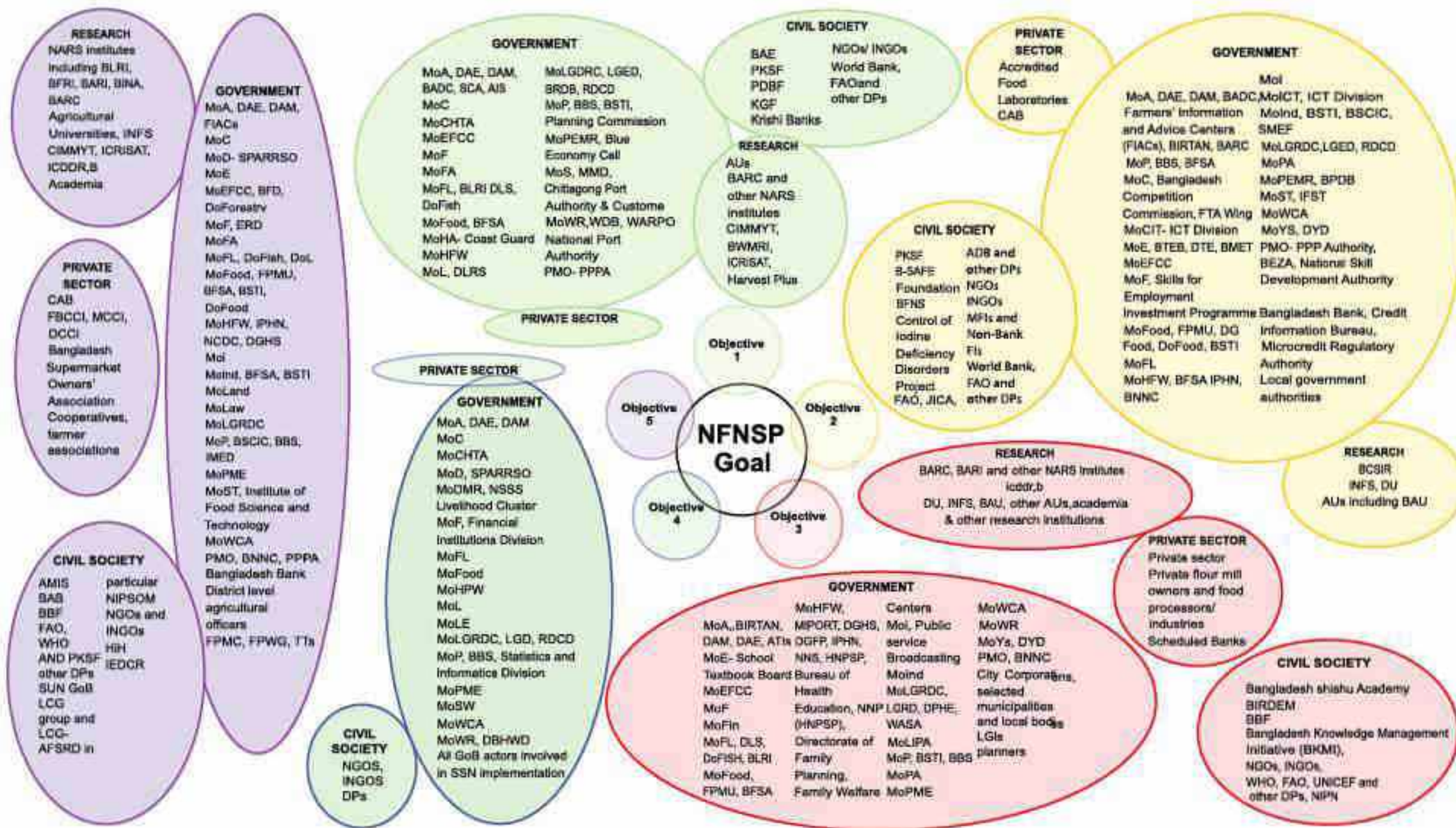
In terms of the implementation of Objective 3 which seeks to enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvement, the primary responsibility rests with MoHFW with BNNC overseeing the nutrition governance of the country, MoFood, MoA (through BIRTAN and DAE) and MoFL, MoWCA, MoInd (through BSTI). Civil society is also critical in promoting adequate nutrition. NGOs for example, are key to ensure delivery of essential and comprehensive nutrition service packages in urban areas and especially slums.

The main ministries involved in implementing Objective 4 which seeks to increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions are MoDMR, MoFood, the Ministry of Social Welfare, MoA and MoFL, MoHFW, the MoC and MoP through BBS. The Cabinet Division is closely involved in periodic reviews and monitoring progress of safety nets. Other stakeholders and NGOs are important in managing shocks.

Because of its cross-sectoral nature, Objective 5 which seeks to strengthen cross-sectoral issues of FNS, notably food safety, food loss and waste, governance and to this end, the coordination, capacity building and partnership for effective policy implementation which by nature involves many ministries and a host of non-government and private stakeholders.

²⁶³ Ministries have been listed in acronym form and by alphabetical order.

Figure 4. Responsible actors and stakeholders



Coordination mechanism and monitoring

A necessary condition to operationalise this PoA is to monitor its implementation regularly to assess progress and adjust interventions accordingly. The institutional arrangement for the monitoring of the PoA builds on the existing FNS institutional coordination framework and monitoring mechanism which produced the previous food policy, investment, and action plans. However, this PoA identifies new GoB agencies as essential FNS partners and emphasises the role of local level institutions and the participation of the private sector, including MSMEs and farmers' organisations not only in implementation but also in validating the results of the yearly monitoring exercise. To this effect, it is proposed that new GoB agencies, local structures, and the private sector, are integrated in the institutional and monitoring setup.

Adequate representation of relevant agencies- including the ones newly identified as important- will be reflected, as appropriate, in:

1. The Food Planning and Monitoring Committee (FPMC)²⁶⁴ - a cabinet level committee chaired by the Food Minister which includes Secretaries from key FNS ministries. It provides strategic guidance, leadership and oversight in planning, coordination and monitoring in all aspects of FNS. It also establishes a high-level commitment to inter-sectoral collaboration;
2. The National Committee (NC), also chaired by the Food Minister, currently comprises the secretaries of key ministries and divisions, heads of universities/research institutions, DPs, private sector and NGOs. The National Committee oversees the CIP implementation and monitoring processes;
3. The Food Policy Working Groups FPWG²⁶⁵ – chaired by the Food Secretary, a national level inter-ministerial coordination mechanism at both technical and operational level;
4. Thematic Teams (TTs) which bring together ministries/government agencies carry out the monitoring activities relating to the policy and associated plans of action and investment plans under the technical, operational and secretarial support of the Directorates of the FPMU.²⁶⁶

It is suggested to complement the NC with five Regional Committees (RCs) which would cover 1. Sylhet and Chattogram; 2. Rangpur and Rajshahi; 3. Khulna and Barishal; 4. Mymensingh; and 5. Dhaka. These would contribute to the implementation of the PoA and the monitoring process by providing a local perspective. The formation of Regional Technical Working Groups (RTWGs) will also be envisaged from the district level institutional arrangements to provide a sub-regional perspective in terms of data and policy implementation and validation²⁶⁷. This will complement the role of FPWG to ensure inter-ministerial and cross-sectoral and integration at national level. RTWGs would provide a good reflection of the cross-sectoral and public-private coordination at district level in support of the TTs' responsibility of gathering PoA-relevant information and data collection. The regional consultations that took place in formulating, validating and approving this PoA, in the midst of the Covid-19 pandemic, demonstrated that virtual events can be effective and cost-saving, and can ensure a high degree of participation. They may therefore be considered as a regular way to hold regional consultations and RTWG-related events and meetings.

The Local Consultive Group on Agriculture Rural Development and Food Security (LGD – ARDFS) will participate in the PoA monitoring validation process with the involvement of relevant FNS

²⁶⁴ The list of members of FPMC can be found at <http://fpmu.gov.bd/agridrupal/food-planning-and-monitoring-committee>

²⁶⁵ The members of FPWG are listed at <http://fpmu.gov.bd/agridrupal/food-policy-working-group>

²⁶⁶ The five TTs reflect the five pillars of the NFNSP:

1. TT-1 Diversified Production
2. TT-2 Market access and value addition
3. TT-3 Food consumption and utilization
4. TT-4 Nutrition-sensitive social protection
5. TT-5 Food safety, data and governance (Cross-cutting)

²⁶⁷ Participants of the RTWG to be based on the list of participants invited to the regional consultations on the PoA formulation.

development partners. Other LCGs relevant to FNS – for example, the LCG on Disaster Risk Reduction (LCG- DRR) and the LCG Health- will be consulted at appropriate junctures of the PoA implementation and monitoring. LCGs are designed to contribute towards effective and coordinated implementation of national policies, strategies, plans and programmes.

Figure 5 illustrates: (1) coordination and strategic guidance which moves from the top (from FPMC) down (up to TT level) and (2) monitoring which from the bottom (TT level) collects data and informs policy makers.

To effectively prioritise interventions and the related investments, a new CIP needs to be designed and monitored (AoI 5.3.3). The PoA monitoring is structured in a way that may also accommodate the monitoring of the new CIP.

Figure 5. Institutional framework



9. Annexes

Annex 1. List of Acts, national policies, strategic and planning documents cross-referenced in the PoA

- Perspective Plan of Bangladesh 2021- 2041 (PP2041)
- Eight Five Year Plan 2020-2025
- Second Country Investment Plan for Nutrition-Sensitive Food Systems 2016-20 (CIP2)
- National Agriculture Policy 2018 (NAP)
- National Agricultural Policy Plan of Action 2020 (NAP PoA)
- National Agriculture Mechanization Policy 2019
- Bangladesh Agricultural Good Practices Policy 2020
- National Livestock Policy 2007
- National Aquaculture Development Strategy and Action Plan of Bangladesh 2013-2020
- National Poultry Development Policy 2008
- Animal Disease Act 2005
- Bangladesh Animal and Animal Product Quarantine Act 2005
- Fish Feed and Animal Feed Act 2010
- Animal Slaughter and Meat Control Act 2011
- Breeding Policy 1992
- Final Draft National Livestock Extension Policy 2013
- Strategic Framework and Action Plan for the Application of a One Health Approach in Bangladesh 2017 – 2021
- Bangladesh Delta Plan (BDP) 2100
- Bangladesh Country Investment Plan for Environment, Forestry and Climate Change 2016–2021
- Bangladesh National Conservation Strategy 2016
- National Water Policy 1999
- Local Government and Rural Development Sector Strategy Paper 2018
- National Strategy for Pourashava Governance Improvement 2016-2025
- Upazila Act and the Union Parishad Act 1998 (amended 2011)
- Bangladesh Public-Private Partnership Act 2015
- Policy for Implementing PPP Projects through Government to Government (G2G) Partnership 2017
- PPP Annual Performance Agreement 2018-2019
- Competition Act (2012)
- National Cooperative Policy 2012
- Cooperative Society Rule 2020
- Bangladesh Economic Zones Act 2010
- National Nutrition Policy 2015 (NNP)
- National Plan of Action for Adolescent Health Strategy 2017-2030
- Second National Plan of Action for Nutrition 2016-2025 (NPAN2)
- Bangladesh Dietary Guidelines 2020(Draft)
- Multi-sectoral action plan for prevention and control of NCDs 2018-2025 with a three-year operational Plan
- 4th Health, Population and Nutrition Sector Programme 2011-16 (4th HPNSP) Operational Plan (OP) Non-Communicable Disease Control
- National Nutrition Services Programme 2011- 2016 (NNS)

- BMS Act 2013 and its Rules 2017
- National Edible Oil Fortification Law 2013
- Action Plan for Implementation of National Social Security Strategy 2016 – 2021 (NSSS)
- Cyclone Shelter Construction, Maintenance and Management Policy 2011
- Guidelines for Disaster Shelter Management
- National Women Development Policy 2011
- National Financial Inclusion Strategy of Bangladesh 2020-24
- National Youth Policy 2017
- National Social Security Strategy Gender Policy 2018
- Intellectual Property Rights Policy 2018 (NIIPRP)
- Bangladesh Strategic Plan of Agriculture and Rural Statistics 2016-2030 (SPARS)
- National Skills Development Policy 2011
- Bangladesh Strategic Plan of Agricultural Statistics 2016-2030
- Food Safety Act 2013
- Bangladesh Climate Fiscal Framework 2020
- Nationally Determined Contribution of Bangladesh – Implementation Roadmap (2015)

Annex 2. Comments from the regional consultations consolidated by region and NFNSP objectives

Objective	Region	Suggested Actions
<p>1. To ensure the availability of safe and nutritious food for healthy diets</p>	<p>Chattogram-Sylhet</p>	<ul style="list-style-type: none"> • Land often left fallow due to absentee landlordism. Need appropriate legislation to ensure both ownership rights of landowners and security of tenure of cultivators and allow fallow land to be brought into use. • Develop Master Water Management Plan involving all relevant ministries: with proper water resource management (e.g., rubber dams to prevent saltwater intrusion, sluice gate system to control flood waters, increasing surface water irrigation). • Adopt adaptive research plan for demonstration and uptake of high value nutritionally rich horticulture crops available with agricultural universities • Promote biosafety research to develop biotic stress and pest and disease tolerant varieties • Promote fast-growing vegetable crops that can be harvested in 1 to 1.5 months in areas prone to climate vulnerabilities like flash floods • Local hybrid seed varieties have to be developed of high value horticulture crops in demand (e.g., capsicum and broccoli), for promotion at scale • Develop strategy for adoption at scale of biofortified rice varieties that have been developed • Hill area livelihoods, agriculture, livestock and fishery need special attention • Livestock production and distribution plan: stress tolerant livestock breeds have to be screened and improved breeds developed, conserved and promoted. The use of livestock germplasm that has come in illegally and is not covered under the Livestock Development Policy, 2007 has to be prevented. • Promote regional germplasm banks for livestock, poultry, fodder, to enable sustainable production in different geographies • Ensure livestock vaccination • Blue Economy: declare 10-20% of the 3500 perennial lakes out of the total 6300 lakes (i.e. 2800 seasonal) in the Haor region as permanent sanctuaries • Strengthen MoFL; take actions on issues like seafood processing technology, validation and safety; plan for data generation and conduct more research; promote non-conventional food items such as seaweed • Promote capture fishery • Establish testing facilities to test aflatoxin levels, AMR and other required parameters at district level, for both crop and animal produce, to ensure food safety and also comply with export requirements • Develop production for export through contract farming • Responsibility of research and extension with the universities should be clearly spelt out and adequate research budget made available • Promote micro seed vendors in remote areas like CHT • Promotion of agricultural diversification is required for <i>Khasia punji</i>

Objective	Region	Suggested Actions
1. To ensure the availability of safe and nutritious food for healthy diets	Rajshahi-Rangpur	<ul style="list-style-type: none"> • Increase dairy production in all eight districts of Rajshahi division by setting up collection centres and chilling plants and ensuring remunerative prices • Ensure stable price for egg and chicken for small poultry farmers • Create awareness and support poultry farmers to get their produce certified and tested • Develop online market for livestock meat products • Promote nutrient rich fish species and small indigenous species farming • Promote zone-specific low-cost technologies and household based integrated farming approaches • Increase knowledge of nutrition among extension personnel • Invest to create permanent infrastructures in area-specific small irrigation and water conservation • Harness ICT and prepare mobile database information on land area, irrigation, crop production etc. for effective extension and planned growth • Land Use Planning is required • Microcredit should be extended for longer period of time • Ensure good quality inputs (seed, fertilizer, pesticides) • Have area-specific aquaculture promotion programme • Monitor quality of feed for livestock and fish • Extension should promote safe food production technologies available with agriculture research institutes • Develop location-specific technologies and varieties, to encourage crop diversification • Promote nutrient-rich vegetable varieties available with BARI • Ensure stable feed price for dairy farmers and establish chilling plants in production area to preserve dairy produce • Promote smaller fruit trees under horticulture, to enhance productivity • Promote rooftop gardening • Bridge gap between DoL and universities and promote available natural growth promoters and antibiotic replacers at field level, to promote chemical free safe food production • Encourage consumption of maize as food, to incentivize production • Promote conservation agriculture • Collateral free loan should be available to all farmers • Extend irrigation water availability to <i>char</i> area • Ensure fodder, animal feed and food safety • Ensure availability of land for grazing of cattle • Stop import of onion and garlic for 4 months from harvesting period
	Barishal-Khulna	<ul style="list-style-type: none"> • Promote biopesticides to replace chemical pesticides • Promote water management through rainwater harvesting, surface water conservation, avoid salt water intrusion and prevent flooding • Revisit and promote traditional methods of water conservation • Promote crops other than paddy that grow in saline and waterlogged conditions • Promote salinity tolerant fodder crops. • Promote production of dairy by-products. • Ensure stable feed cost for dairy farmers • Promote zero tillage cultivation to increase production • Promote floating agriculture • Promote Sorjan system of Integrated fish farming • Mechanisation to suit small farmer needs • Harness ICT to provide need-based information to farmers • Create awareness and promote crop insurance • Popularise cultivation of mustard and sunflower oilseeds • Promote cultivation of winter vegetables • Demonstrate Model Integrated Homestead Farming – fish-livestock-veg with training on nutrition; replace raintree with fruit trees on homesteads • Promote proper land use and crop planning • Promote quinoa as a nutrient-dense crop and develop its value chain • Promote production of indigenous foods

Objective	Region	Suggested Actions
1. To ensure the availability of safe and nutritious food for healthy diets	Dhaka-Mymensingh	<ul style="list-style-type: none"> • Prioritise which crops should be promoted, which approach, with responsibility and time frame • Build capacity of university system through advanced technology training in advanced breeding techniques; gene editing; speed breeding; nanotechnology • Encourage international coordination for research and university-research institute-private sector collaboration • Encourage research on ethnic food crops and underutilised crops – reservoir of genes • Forests are a storehouse of uncultivated crop varieties – germplasm collection and conservation are crucial – participatory conservation. • Ban use of industry and arsenic polluted water for irrigation • Promote balanced fertiliser application • Establish laboratory testing facility for testing nutrient content in plants • Promote intercropping of green leafy vegetables and pulses with cotton; cottonseed – source of edible oil, fuel and fodder/feed for livestock and fish • Attention to soil health and policy to prevent soil contamination • Use ICT for effective nutrient application • Crossbreed with indigenous livestock breeds to increase production • Strengthen extension to reach research findings to farmers • Recycle biological waste at household and industry level, for feed and biofertilisers • Promote aquaponics in rooftop gardening. • Policy to promote biofortified crop varieties • Conserve and promote small indigenous fishes rich in micronutrients • Introduce climate-smart agriculture using appropriate genotype varieties for higher production, good quality grain and reduce cost of production in disaster prone areas • Follow integrated Plant Nutrient System approach basing fertiliser application on soil health • Develop Market Integration and Market information Systems to ensure farmers get competitive prices and awareness is created amongst them

Objective	Region	Suggested Actions
2. To ensure access to safe and nutritious food at an affordable price	Chattogram-Sylhet	<ul style="list-style-type: none"> • GoB should purchase farmers' crops in advance or provide at least three months loan in the crop harvesting season so that farmers can keep their rice and sell at a higher price, instead of resorting to distress sale to repay debts • Establish farmers' market centres • DAM should provide price projection on daily basis • Establish laboratory testing facilities at district level • Small scale cold storage facilities should be established at local level • Need for periodically reviewing food prices across urban areas • Capacity development and adaptive financing of value chain actors • Promote cooperative marketing and storage infrastructure for year-round availability
	Rajshahi-Rangpur	<ul style="list-style-type: none"> • Ensure adequate transport facility to reduce damage and loss of nutrients during transit • Legally stipulate at city corporation level the form in which products may enter markets • Dredge rivers to enable transportation of food items • Upgrade Rajshahi Airport to international standard and declare as international airport to increase export to neighbouring countries • Efficient use of the land port of Panchagarh for export to India, Nepal, and Bhutan • Construct feeder roads to improve access • Promote local storage facilities including for potatoes • Special attention to transport facilities in <i>char</i> areas to enable transport of produce to market • Introduce "Climate Service" at farmers' level. Disseminate information of weekly forecasting to farmers • Local government institutions should be more involved and accountable to establish markets and ensure accessibility • Support marginalized women in business • Make infrastructure women-friendly • Establish postharvest processing facilities for vegetables • Promote and disseminate nutrition messages to vegetable vendors, vegetable shops, markets • Need export processing zones for potato to enable and promote disease free exports • Scale up and promote processing of local fruits like mango and litchi
	Barishal-Khulna	<ul style="list-style-type: none"> • Establish an Organic Produce Corner in all markets under the Food Department • Establish more growth centres run by farmers' organisations • Reduce the role of middlemen in FVC • Promote farmer level training for effective technology transfer • Promote SBCC on safe food • Require small- and large-scale preservation and processing industry to reduce the post-harvest loss, e.g., for guava and amra in the south • Train households on preservation and processing through sustainable technologies • Address antibiotic use in the shrimp cultivation which leaves residue • Provide vans and pickup trucks to fishermen • Increase vegetable production and availability of local food items to enhance food diversity in the coastal regions • Promote technologies developed by universities for different fruit leather (mango, watermelon, tamarind) • Promote beekeeping as a profitable venture

Objective	Region	Suggested Actions
2. To ensure access to safe and nutritious food at an affordable price	Dhaka-Mymensingh	<ul style="list-style-type: none"> • Promote biodegradable packaging • Promote farmer producer organisations/cooperatives • Promote cooperative value chain development • Focus on postharvest low-cost technologies to retain nutrient content • Strengthen Trading Corporation of Bangladesh • Address micronutrient loss in food • Give attention to the packaging sector and modernize storage facilities • Support for research requirements to study and reduce food waste • Fund research to understand food hazards in both plant and animal foods. Develop a national Health Risk Index that can be referred to • Chilling and freezing facilities for both storage and transport have to be increased to prevent losses occurring during transport of fish • Generate employment for youth by developing agriculture machinery service providers • Develop cotton crop as a commercial crop to improve economic food access

Objective	Region	Suggested Actions
3. To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements	Chattogram-Sylhet	<ul style="list-style-type: none"> • Monitor nutrient-dense supplementary food for babies • Carry out awareness campaigns on nutrient quality, labeling, and nutritional benefits • Consider how availability and use of ethnic foods of tribal communities can contribute to dietary diversity • Build awareness among tribals on dietary diversity, safe food preparation and hygienic practices • Consider issues of water availability in hill areas and ensure safe water supply to tribal communities. • Promote local lentils to meet the protein and micronutrient requirements of the tribal populations and those in coastal regions who may not be able to afford and consume animal source foods like meat and fish • Consider local culture and food behavioural practices and create awareness on the nutritional benefit of the local foods for improved diets and nutrition in these communities • Address water availability and hardness in offshore islands • Combine agriculture, nutrition, and women empowerment components in family-based training activities and include both the husband and wife as participants in the programme. • Include micronutrient fortified foods including fortified rice • Include males as targets of adolescent nutrition training programmes • Nutrition education programmes should include males, mothers-in-law, and other family members as participants • FCT updating

Objective	Region	Suggested Actions
<p style="text-align: center;">3. To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements</p>	<p style="text-align: center;">Rajshahi-Rangpur</p>	<ul style="list-style-type: none"> • Promote cooking guidelines including use of appropriate utensils in a practical way for use by the wider population. • Dissemination and promotion of FCT and dietary guidelines at field level • Promote local foods available including fruits among the communities e.g, Santhals • Need to have region specific food lists and develop local recipes. • Utilization of local fruits should be promoted through appropriate processing e.g., safeda, jackfruit, woodapple • Promote immunity 'building foods'; foods for infection control; ensure dietary diversity e.g, fruits, vegetables, herbs, spices, protein rich foods • Emphasize the role of micronutrients in the diet: their role in cognitive functions; zinc, and iron, folate as immunity building foods. • Special attention to nutritional needs of elderly, most affected during COVID -19 • Promote local CF for young children ,using available ingredients. • Promote therapeutic foods using local ingredients for MAM and SAM cases too, in addition to national health protocols. • Give consideration to women's empowerment, ensure their role in decision making • Promote food-based approaches in a clear, practical and integrated way. • Promote age-specific dietary guidelines through school-based nutrition education . • Promote healthy cooking practices through mass media • Consider floating populations, homeless, beggars - while disseminating NE messages • Issues of family planning, small family norms should be included in nutrition Aols • Provide safe foods at affordable prices by establishing safe vegetables and fruits markets • Promote nutritionally rich perennial trees under homestead gardening
	<p style="text-align: center;">Barishal-Khulna</p>	<ul style="list-style-type: none"> • Establish and enforce garbage disposal systems aligning with existing government policies/ guidelines/ documents. • Food consumption data needs to be collected to measure dietary diversity and to analyze the nutrient gaps. • Promotion of NUS marine fishes which are good source of omega-3 fatty acids and iodine to enhance consumption need to be emphasized. • Dissemination of FCT and dietary guidelines at field level • Discuss nutrition needs of elderly. • In coastal region, male participation in childcare is very low. SBCC should focus on gender issues and consider the sensitivity of enhancing male participation to support childcare • Identify the basic needs region-wise such as char, haor, coastal areas • TV cooking shows can promote appropriate cooking methods, and nutrient-dense recipes with nutritive value explained, to enhance healthy consumption. • Promote consumption of local fruits and vegetables • Promote processing and cooking methods that retain bioavailability of nutrients • Target children from primary school level and promote dietary guidelines • Involve District Information Officer to disseminate FBDG • Arrange awareness campaigns, seminars, mass media activities and development of social media tools (i.e. YouTube videos) to disseminate dietary guidelines at grassroots level • Include key food list with various seasonal foods and age-specific menu planning mofood website so that mass population can access this information and improve their diet. • There is need for nutrient gap analysis based on recent HIES. • Increase dietary diversification to improve nutrition adequacy • Identify/ promote fruits/veg with health promoting properties like polyphenols • Enhance commercial fruits gardening to produce year-round nutrition-dense fruits.

Objective	Region	Suggested Actions
3. To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements	Dhaka-Mymensingh	<ul style="list-style-type: none"> • FNS awareness should be included in the school text curriculum • Sensitize students on agriculture production process and value addition • Update guidelines for improving food habits, disseminate National Dietary guidelines • Assessments carried out by BNNC on COVID -19 impacts on FNS need to be reviewed and the results should inform the actions under nutrition and related Aols of the PoA • Disseminate nutrition awareness based on findings of research study on nutrient density and affordability of habitual and desirable diets by lifecycle stage, region, and vulnerable groups • Promote immunity boosting foods, neglected underutilized species, and local foods • Digitalize and promote information on the nutritive value of local foods, safe food preparation, appropriate cooking techniques through TV shows and media outreach. • Involve mothers of students in school-based nutrition education and awareness programmes. • Promote nutrition awareness at household level, especially on safe food processing, preparation, and consumption of healthy diet. • Recruit nutritionists at district level and involve them to create nutrition awareness • Promote School-based nutrition education programme on diet and hygiene • Disseminate nutrition messages in school management committee meeting and parents -teachers meeting. • Target mothers to promote nutrient-dense recipes and appropriate cooking practices • Introduce training program for spouses on nutrition aspects. • Provide training to women and other household members on nutrition aspects to break social taboos and cultural barriers. • Promote processed fish for consumption and its other uses such as fish meal, and medicinal oil • Promote bran rice/unpolished rice • Promote stevia as sugar substitute • Develop Health Risk Index for every food to ensure safe and nutritious food.

Objective	Region	Suggested Actions
4. To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions	Chattogram-Sylhet	<ul style="list-style-type: none"> • Develop accurate early warning system to enable proper pre-disaster action, circulating pre-preparedness to protect human security and for storage of required emergency food. • Maintain 1.05 million metric tons as buffer stock all-round the year • Provide <i>khadya bandhob</i> programme in urban areas to support the urban poor. • Emphasize on accurate data on population and production for planning SSNPs – develop single registry system and avoid duplication and mistargeting. • FFW, Rural Infrastructure Development, VGF, EGPP, GR etc. and SSNPs which are basically kind transfer programmes that have been converted into cash transfer. So, it is needed to include these beneficiaries under the FFP and OMS. • Increase the procurement centres and purchase from large rural markets • Need for real time proper monitoring to measure the effect of distributed fortified rice. • Fix procurement price of paddy and wheat in advance

Objective	Region	Suggested Actions
<p>4. To increase access to nutrition-sensitive social protection and safety nets across lifecycle with a focus on vulnerable groups and regions</p>	<p>Rajshahi-Rangpur</p>	<ul style="list-style-type: none"> • Social safety net programmes should have necessary nutrition focus • Begin emergency food bank where the rich people donate food grain that can be utilized to mitigate emergency shocks and disaster. • Activate community-based storage facilities by involving the locally elected body. • Start SSNPs support for slum people in urban areas. • Expand and strengthen food fortification under the SSNPs. • Provide a nutrition sensitive package under the SSNPs for nutritionally vulnerable people. • Ensure fair price and price support to marginal farmers during the crisis period. • Assess requirement of emergency stock for round the year availability, for managing internal and external procurement. • Have a buffer stock of more than 1.05 million MT because population size has increased • Need research work to link all safety net programmes. • External procurement is required to respond at the time of crisis and emergency. • Research and evaluation on impact of food friendly programme (FFP) and vulnerable group development (VGD) programme is required • Add lentils as source of protein with fortified rice for distribution in FFP • Price control of rice is required. • Scale up distribution of fortified rice • Provide farmer's card to give price incentive to the farmers through foodgrain procurement.
	<p>Barishal-Khulna</p>	<ul style="list-style-type: none"> • Repackaging of fortified rice from 50kg/sack to 30 kg/sack • Fish can be included as part of the food package in PFDS • Arrange training for alternative income generating activities (AIGAs) for landless and for community who live in floating boat and extend SSNs for them. • Need special support for landless and vulnerable MUNDA community through SSNPs. • Enhance the coverage and extend the duration of VGF programme for fishermen during the ban period of fishing. • Organize AIGAs training for fishermen during lean season and vulnerable communities (e.g., Bede), to create employment. • Ensure and validate the food grain production data and assess stock accordingly • Ensure beneficiary selection process unbiasedly under the SSNPs. • Increase coverage (number of upazilla) for distribution of fortified rice (Pushti Chal) • Increase the number of VGD card for the fishermen community. • Enhance the coverage of SSNPs • Arrange training for AIGAs for rural women and young people such as vermi compost production, commercial flower production • Prepare list of farmers appropriately to provide price incentives to the real farmers • Select vulnerable people under the SSNPs transparently. • Conduct research to identify micronutrient deficiency level and areas to prepare distribution plan for fortified rice and micronutrient enriched biscuits, in disaster-prone areas • Distribute VGF benefits to the beneficiaries through digital financial services, to reach the actual beneficiaries

Objective	Region	Suggested Actions
4. To increase access to nutrition-sensitive social protection and safety nets across lifecycle with a focus on vulnerable groups and regions	Dhaka-Mymensingh	<ul style="list-style-type: none"> • Interlink microfinance institution and microcredit programmes with social safety nets • Strictly monitor the PDFS (procurement, distribution, stock) through digital system • Procure non-cereal nutritive food stuffs (pulses, potatoes, vegetables) at village level and establish food hubs (working station) at subnational or union level to store the procured food. Later, transfer the food from food hubs to shortage areas. • Introduce crop and livestock insurance to support the vulnerable groups at field level through piloting for customization the insurance system. • Expand the budget allocation for SSNPs from 17% to 25%. • Besides lottery system in the 'Krishoker Apps' to procure food grain from the farmers, increase the number of farmers to purchase food grain directly. • Continue school feeding programme during the COVID-19 period • Expand and strengthen the food fortification programmes. • Prepare vulnerability index as pre-disaster strategy. • Stop the selection bias and leakage for proper implementation the SSNPs at local level introducing transparent method for beneficiary selection. • Adequate preparedness to provide incentives through instant responses to any kind of disaster, including heat wave that affects crops, by selecting beneficiaries unbiasedly • Strengthen the early warning system by coordinating with SPARRSO, DAE and DLS and provide major responsibility to the DAE. • Introduce crop insurance to mitigate vulnerability • Strengthen the coordination between MoA and MoFood to mitigate food crisis and ensure food security for the vulnerable people • Improve data deficiency for efficiently managing the PFDS, market and price volatility of non-grain food • Need to apply integrated approach to reach vulnerable people in disaster prone areas by unbiasedly selecting the beneficiaries of SSNPs.

Objective	Region	Suggested Actions
5. To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation	Chattogram-Sylhet	<ul style="list-style-type: none"> • Action Plan has to be supported by investment plan for operationalisation • Strengthen the governance mechanism for FNS • Strengthen the Bangladesh Competition Commission to ensure affordable price • National Food Pricing Policy is required and should be monitored • Establish apex body for capacity development at upazila level • Strengthen nutrition focus across all ministries and improve inter-sectoral collaboration. • Have regular UNCC, DNCC and district-level meetings • Create awareness among the consumers about food safety and how they can submit grievances for redressal and remedial actions • Strengthen the capacities to monitor food adulteration. • Develop Taskforce to ensure regular monitoring of production distribution. • Conduct quality research on a routine and systematic basis • Continuous Professional Development training can be included • Collect food consumption data periodically (i.e., baseline, mid-term etc.), ensure accuracy of data collection and produce a baseline database • Conduct more RCTs and accommodate all the findings for evidence-based policy making • Develop central and regional data management systems • Recycle biodegradable household waste as an organic fertilizer/nutrient for minimizing environmental degradation as well as enhancing the livelihood security of locals • Increase number of fish landing centres in the coastal area for minimizing the loss of fish products and improvement in the quality of seafood • BIHS data needs to be included as a rich source of data on agriculture, dietary intake, anthropometry, women empowerment and safety nets • Ensure waste segregation of biodegradable and non-biodegradable waste and recycling so that it does not go into the environment and mix with the food chain.

Objective	Region	Suggested Actions
5. To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation	Rajshahi-Rangpur	<ul style="list-style-type: none"> • Promote holistic approach at the ground level with integration between the three extension departments (Ag-Livestock-Fisheries) for addressing nutrition effectively at the household level. This has to be endorsed at the Ministerial level for rollout. • Need for separate ministry for food processing • More research on Big data. • Strengthen mobile court to regulate use of antibiotics (i.e., in poultry) and pesticides • More communication, coordination between MoLGRD and DAM is required • Conduct survey in collaboration with BBS to monitor policy implementation • National nutrition survey is required every 2 years • Appropriate measures/legislation required to prevent loss of nutrient content in rice during de-husking and polishing • Ensure safe food preparation in restaurants and street food stalls
	Barishal-Khulna	<ul style="list-style-type: none"> • Bangladesh largely depends on upper riparian countries for surface water • Food, Nutrition and Agriculture should be under one Ministry for effective delivery • Set up National Data Center for staple foods • BBS and DAE data are not harmonized, require coordination and harmonization • Capacity strengthening of BSTI; certification by BSTI should be recognized in export markets and certification of imported items should be accelerated • Establish BSTI certified labs in each district for testing quality of produce • Sale of pesticides/insecticides should be against prescription and purchased from licensed sellers only. DAE can be empowered to issue prescriptions • Update data on postharvest loss at university level
	Dhaka-Mymensingh	<ul style="list-style-type: none"> • Implement GAP, GAqP, and GHP • Food safety management should be coordinated by BFSA. • Enhance linkages of Food Safety Officers with local intersectoral departments • Develop a national policy for reducing FLW • Examine how the waste can be recycled – e.g., household waste can be used to create biocompost; mature technologies to be taken up and promoted by GO/NGOs. • Enforce Food Safety policies; create awareness • The 4th Industrial Revolution has been acknowledged by GoB and should be reflected in the PoA. The Ag dept is taking it up as a priority programme. Includes AI, block chain management and data management systems • Conduct annual Central Food Fair/Innovation Mela where technologies can be exhibited and a few potential ones identified for piloting at the field level. • Develop mechanisms to attract private sector investment • Facilitate research on postharvest losses with regard to livestock, poultry and fish • In addition to BARI, include other research institutions and universities in development of nutrient-rich crop varieties and provide support for research • Bring universities under NARS and ensure support for research • Ensure strong collaboration between BARI, BRRI and BINA • The Cotton Board is engaged in a sustainable cotton initiative, using software to advise farmers on use of inputs and linking farmers with the end user through a QR code. A similar initiative can be adopted for food crops • Create agency for quality certification/organic produce certification/GAP certification • Include energy conversion of food waste as part of circular economy approach • Increase priority to livestock • Promote Internet of Things (IoT) – use for a variety of purposes in agriculture • Generate Awareness through TV and media to reduce FLW

Annex 3. Comments from the Thematic Team and Stakeholder Consultations by Objective

Objective	Suggested Actions
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">1. To ensure the availability of safe and nutritious food for healthy diets</p>	<ul style="list-style-type: none"> • Increased effort for making food available and affordable • Emphasize on the plant-based protein, and fisheries too apart from livestock • Increase the stock of natural source fishes • The land use policy should include availability of land for salt production • Study forward and backward linkages in salt production chain to ensure sustainable production and distribution of iodised salt • Address problem of water salinity • In coastal areas where there are polders, excavate canals for fresh water flow • Encourage farmers to grow salt tolerant varieties that are available • Ensure effective water management which is often the issue rather than availability • Motivate youth to engage in agriculture; we need partnerships • Bring more land under cultivation in the haor region, with proper water management. A lot of land is left fallow in the Sylhet region that can be brought under cultivation. • Focus on increasing farmer income and employment in order to improve consumer access • Promote crops other than rice and cropping intensity in fallow land, Barind tract and highlands • Promote vegetables and short duration climate resilient cereal crops like millets • Short duration crop varieties can be promoted in rice fallow and as intercrop with rice • Promote farming system approach that combines multiple crops, livestock, poultry • Use of insecticides should be in the right proportion – following GAP • Address soil erosion especially in hill areas and soil acidification in north Bangladesh • Measure heavy metal content in soil and adulteration in fertilisers • Promote family nutrition gardens on homestead land • Increase awareness on GAP policy, agriculture mechanization policy • Promote sorghum and millets in <i>char</i> lands • Establish gene bank to conserve indigenous fish varieties • Natural resource management measures should take into account ensuring access to <i>jheels</i> and common waterbodies for fishing to fish farmers and social equity issues addressed
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">2. To ensure access to safe and nutritious food at an affordable price</p>	<ul style="list-style-type: none"> • Require a software for Upazila Food Godown, for maintaining stocks • Demand estimation of varieties of food based on geographic locations • Require more demand-based training • Ensure credit for the ultra-poor people • Increase the social equity for the fishing or natural habitats Improve the transportation system (like special train for mangoes put in place end of May 2021) • Need software for public disclosure of market price information • Need more cooperatives like Milk Vita • Information, education and communication materials for agro-food is required • Focus on rural development • Improve access to market for hill and remote areas and ethnic groups • Diversified income sources should be promoted particularly for agriculture labour • Promote low cost solar driers for preserving winter vegetables • Support salt producers with new technology to undertake production in an environmentally sustainable manner with due attention to quality, and also to increase productivity • Develop a policy for dissemination of biofortified rice varieties and a marketing strategy in association with rice mills • Market infrastructure has to be improved at union level • Update National Cooperative Policy 2012 • Promote the hygienic production and processing of date palm molasses (<i>khejur gur</i>) with improved technology. <i>Khejur gur</i> can be widely used as a source of energy/ minerals

Objective	Suggested Actions
<p>3. To enhance the consumption and utilization of healthy and diversified diets for achieving nutrition improvements</p>	<ul style="list-style-type: none"> • Consider all essential foods and nutrients based on nutritional requirements according to lifespan categories • Door to door household surveys are required to assess the nutritional demand • Nutrition planning across all levels is required to meet nutrient targets of policies & plans • Regional, district, upazila nutrition situation/profile are needed to determine nutritional demand and nutrition planning • Influence of changes in income, social economic status, and urbanization on food choices and consumption, needs to be considered for food and nutrition planning • Desirable intake needs to be calculated based on body weight and height • There is need for coordination among the training institutes under DLS and DoF and among the research institutions • Accelerate initiatives for eliminating water scarcity • Enhance extension activities to promote locally produced foods (e.g., jute leaves (<i>pat sak</i>) which is a micronutrient rich leafy vegetable) through DAE, RDCD and other sectors of the government. Action research needs to be carried out on these issues • Three jute varieties have been developed whose leaves are richer in nutrient content (iron, calcium and vitamins) than spinach. This knowledge has to be disseminated • Carry out mass nutrition training on balanced diets and dietary guidelines especially simplifying it for the understanding and application of daily-wage labourers • Strengthen coordinated mechanisms for training across the country at grassroot level • Awareness has to be generated on cooking methods without loss of nutrients • In hill areas, address low consumption of animal food
<p>4. To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions</p>	<ul style="list-style-type: none"> • Central Aid Management System (CAMS) software has been developed for food aid in Bangladesh under the Department of Disaster Management (DDM), which can be widely used • Add nutrition, energy dense and allergy free rice-based biscuit and cake that have been innovated by BRRI through NATP Phase 2 research under the school feeding program • Ensure fair price for CHT food products • Develop and support low-cost food grain preservation systems for CHT population • Increase the number of food grain procurement centres and involve local entrepreneurs in food grain procurement through union digital centres • Apply the 'Krishoker App' procurement tool nationwide for efficiently managing the food grain procurement system • Modernize, increase and improve the storage capacity to maintain food grain quality • Improve the data system on social safety net programs through Agricultural Wing of BBS • Involve union level relief officers in policy making. They effectively handled disbursement of COVID-19 covid relief measures • Improve data management to ensure instant availability of information on food stocks
<p>5. To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation</p>	<ul style="list-style-type: none"> • Food testing facilities should be increased • Reduce food loss in the food value chain • Emphasize safe food production and enhance safe food supply chain to preserve nutritive value of foods and vegetables • Promote collaboration between crop research institutes (e.g., rice, sugarcane, cotton), to arrive at what can be grown between crops • Increase awareness on GAP policy, agriculture mechanization policy • Require different policy for vulnerable and geographically challenged areas • Inter-ministerial collaboration is required to address issues at the ground level • Promote and adopt sanitary and phytosanitary measures for safe food production to promote exports • Ensure permanent employment for staff trained in food testing • Apiculture and beekeeping should be promoted and their biodiversity conserved • Match ecological advantage with crop system planning • Conserve traditional crop varieties • Monitor use of growth regulators

Annex 4. List of Areas of Intervention by NFNSP Strategy and Objective

Objective	Strategy	Area of Intervention
OBJECTIVE 1 To ensure availability of safe and nutritious food for healthy diets	Strategy 1.1 Increase productivity while ensuring sustainable production of cereals and nutritious food including horticulture, fisheries & livestock	1 1.1.1. Develop improved climate-smart technologies for productivity gains, agricultural diversification, sustainable intensification, and enhancement of nutrient-content
		2 1.1.2. Disseminate improved technologies and practices at farmer and farm level through effective and participatory extension services
		3 1.1.3. Expand and promote the use of water-efficient and environmentally friendly alternative irrigation technologies, including surface irrigation
		4 1.1.4. Improve timely access to credit including micro-credit, to small-scale producers through suitable institutional reforms
		5 1.1.5. Improve input use efficiency for productivity gains, sustainability, and health and environmental protection
		6 1.1.6. Promote the production of quality feed and fodder through appropriate support to feed and fodder industries for fisheries and livestock
		7 1.1.7. Stimulate the blue economy by promoting the sustainable development of marine fisheries and aquaculture in coordination with other non-agricultural uses and the private sector
		8 1.1.8. Develop and promote eco-friendly and responsible practices for animal health along the principles of "One Health"
		9 1.1.9. Strengthen the role of POs and cooperatives to reduce the cost of production, improve market access, and increasing the prices received by producers
	Strategy 1.2 Scale up nutrition-sensitive diversification of food production	10 1.2.1 Promote diversification into horticulture, fisheries, livestock, poultry and dairy products with high nutrient and micronutrient content including regional and ethnic foods
		11 1.2.2. Increase funding and improve efficiency of R&D for sustainable agriculture
		12 1.2.3. Improve the availability of safe nutritious food through innovation and expansion of appropriate methods of urban-based food production
OBJECTIVE 2 To ensure access to safe and nutritious food at an affordable price	Strategy 2.1 Improve market access and stabilize food markets	13 2.1.1. Promote the establishment, improvement and management of post-harvest marketing infrastructure and processing facilities for horticultural products, pulses and legumes, livestock and fisheries
		14 2.1.2. Set up financial intermediation services with improved access to credit for agro-processors along with other complementary services
		15 2.1.3. Maintain an orderly market management by securing property rights, regulating competition and stabilizing prices
		16 2.1.4. Ensure trade liberalisation and facilitation to support the supply of quality food at all times
	Strategy 2.2 Improve value chain and marketing systems	17 2.2.1. Stimulate innovation-led efficiency gains in FVC by shortening the chain, improving cooperation among agents and by reducing food losses and waste
		18 2.2.2. Encourage and support the establishment and growth of financially viable MSMEs
		19 2.2.3. Create an enabling environment to attract private investment in infrastructure, processing, value addition, marketing and eliminate business barriers
		20 2.2.4. Promote inclusive cooperative/group-based processing and marketing
		21 2.2.5. Strengthen ICT-based market information system to provide real time support to farmers
	Strategy 2.3 Preserve and enhance nutrient content along the value chain	22 2.3.1. Preserve and promote food safety and nutrients along the value chain including during transportation, processing, packaging, storage, wholesale and retail
		23 2.3.2. Promote the fortification and nutrition enhancement of relevant foods where desirable and efficient
		24 2.3.3. Promote innovation and development of appropriate technologies to preserve nutritional value, in local and export processing zones (EPZ), including under Public-Private Partnership (PPP)
		25 2.3.4. Build the capacity of the private sector to test food and communicate results to and engage with value chain actors for adequate remedial actions, and establish food traceability mechanisms
	Strategy 2.4 Raise incomes of the poor and food insecure	26 2.4.1. Expand and promote agriculture-driven, off-farm employment and other employment along the food chain by expanding vocational training opportunities particularly for rural youth, women and disabled people
		27 2.4.2. Provide adequate credit, technology, information, training and other related services for the growth of agro-based industries and the broader rural non-farm economy, with special emphasis on the most vulnerable sections of the population
	OBJECTIVE 3 To ensure access to safe and nutritious food at an affordable price	Strategy 3.1 Improve market access and stabilize food markets
29 3.1.2. Support the implementation of DDP plans for a healthy and sustainable food system		

Objective	Strategy	Area of Intervention	
OBJECTIVE 3 To evaluate the establishment and utilization of healthy and diversified diets for achieving nutrition targets	Strategy 3.2. Enhance nutrition knowledge, promote good dietary practices and encourage consumption of safe and nutritious diets	30 3.1.3. Expand human resources and strengthen institutional arrangements to improve performance of nutrition services with special emphasis on field level	
		31 3.2.1 Develop and promote local foods, healthy cooking and food combinations, safe storage including knowledge on nutrient labelling	
		32 3.2.2. Scale-up integrated nutrition education strategies to enhance consumption of healthy, diets, increase awareness of the nutrient composition of local foods as well as to prevent and control malnutrition (undernutrition and overnutrition)	
	Strategy 3.3. Optimise food utilization through provision of safe water, healthy diets and improved food hygiene and sanitation	33 3.3.1. Expand programs for immunization, control of ARI, prevention of cholera and diarrhoeal diseases	
		34 3.3.2. Strengthen the implementation of NNS delivery integrated with community clinics targeting children and women suffering from persistent weakness and micronutrient deficiencies	
		35 3.3.3. Scale up the supply of safe water for consumption and domestic use	
		36 3.3.4. Improve sanitary facilities and hygiene practices, including the prevention of animal to human transmission of disease and prevention and control of food and water-borne illness	
OBJECTIVE 4 To increase access to nutrition-sensitive social protection and safety nets across life cycle with a focus on vulnerable groups and regions	Strategy 4.1 Improve management of the public food stock and distribution system	37 4.1.1. Inform decision-making and improve planning for price support to farmers, market stabilization and public food distribution	
		38 4.1.2. Enhance the management of procurement, public food stocks and prices stabilization activities and implement a nutrition sensitive PFDS	
		39 4.1.3. Ensure adequate storage of food grain maintaining quality and prevent deterioration of stored foodstuffs in the PFDS	
	Strategy 4.2. Improve disaster preparedness, responses, rehabilitation and mitigation	40 4.2.1. Increase the resilience of agriculture systems through various mechanisms notably climate-smart technologies, adoption of stress-tolerant crop varieties and implementation of good agriculture, animal husbandry and fisheries practices for the production of healthy foods	
		41 4.2.2. Increase the disaster-coping ability of poor farming families, support home-based farming especially through "Amar Bari Amar Khanar" (My Home My Farm), and protect poultry, livestock and other assets	
		42 4.2.3. Ensure operation of emergency shelters with nutritious and safe food, safe drinking water, sanitation and healthcare for disaster-affected people, especially for women, elderly, disabled and children	
		43 4.2.4. Facilitate and coordinate disaster response, mitigation and rehabilitation through timely and strategic storage of public food stock, rapid distribution to disaster-affected people, and effective mobilization through various modalities including public-private partnerships	
	Strategy 4.3. Strengthen social protection for poor and vulnerable groups, including disabled and displaced	44 4.3.1. Strengthen social protection in disadvantaged areas and for disadvantaged groups	
		45 4.3.2. Ensure safety nets for the poorest and nutritionally vulnerable, especially female-headed households, during periods of seasonal crises and food shortages	
		46 4.3.3. Develop and implement nutrition-sensitive social protection programs, including food fortification, nutrition education, and behaviour change communications	
		47 4.3.4. Ensure proper coordination and co-operation to integrate social protection with agricultural development, income generation, and micro-entrepreneurship development	
	OBJECTIVE 5 To strengthen cross-sectoral food and nutrition security governance, coordination, capacity building and partnership for effective policy implementation	Strategy 5.1. Improve food safety, quality control, and awareness of food safety and hygiene	48 5.1.1. Ensure conformity and compliance of food safety policies (laws, standards and regulations)
			49 5.1.2. Develop, improve, and establish traceability mechanisms and enforce regulatory frameworks to control food hazards within the food supply chain
50 5.1.3. Develop and promote education and consumer awareness on food safety			
Strategy 5.2. Reduce food losses and waste		51 5.2.1. Minimise on-farm food losses	
		52 5.2.2. Reduce off-farm losses	
		53 5.2.3. Tackle food waste	
Strategy 5.3. Improve data, information and analysis for evidence-based planning, monitoring, evaluation, and update of policies and programs through wider partnerships		54 5.3.1. Produce/generate, disseminate and ensure access to reliable and timely FNS data and information by setting up an inter-agency FNS data sharing mechanism	
		55 5.3.2. Develop and implement a big data analytics ecosystem for the food system	
		56 5.3.3. Operationalise the implementation of the NFNSP, its Plan of Action and Country Investment Plan for FNS through an effective M&E system	
		57 5.3.4. Ensure the cross-sectoral integration of the NFNSP, PoA and its investment plan with other FNS-related initiatives and its coherence with national socio-economic development efforts	

Objective	Strategy		Area of Intervention
	Strategy 5.4 Strengthen regulatory management, climate resilience and gender roles	58	5.4.1. Develop and implement effective regulatory instruments and guidelines for priority issues
		59	5.4.2 Strengthen gender mainstreaming for food and nutrition security
		60	5.4.3. Develop and promote climate-resilient food systems
	Strategy 5.5. Strengthen FNS governance, policy coherence, capacity strengthening and leadership across stakeholders	61	5.5.1 Strengthen policy uptake, nutrition leadership and institutional capacity of relevant secretariats and public institutions
		62	5.5.2. Strengthen the capacities at subnational level including local government, non-state actors and consumer associations by facilitating knowledge exchange and partnerships
		63	5.5.3. Strengthen private sector capacity by promoting the transfer of technologies and knowledge
		64	5.5.4. Establish frameworks for national and subnational FNS stakeholder partnerships to ensure mutual accountability, transparency and effectiveness and operationalise an umbrella organization for the active engagement of stakeholders, especially youth



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